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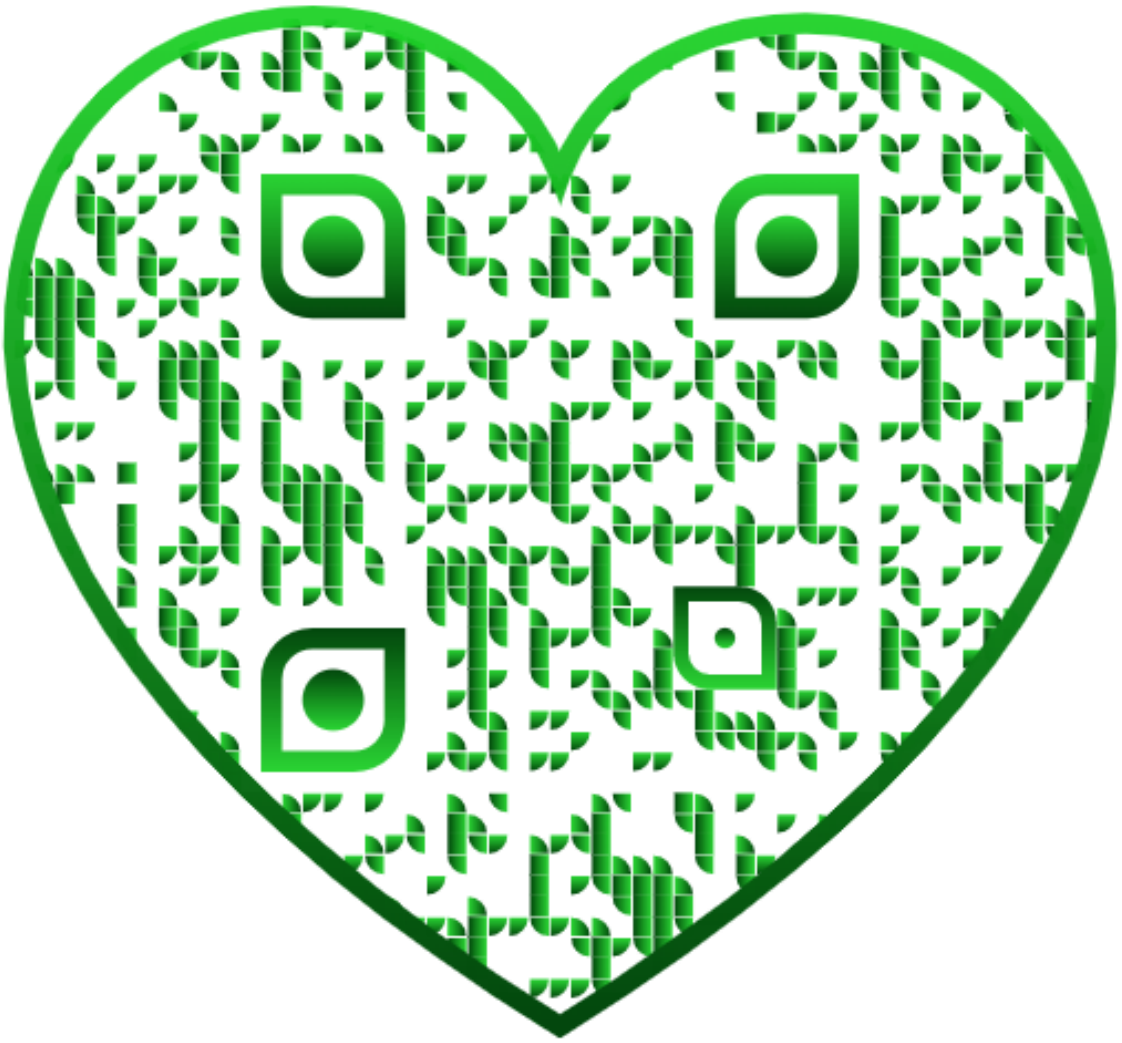

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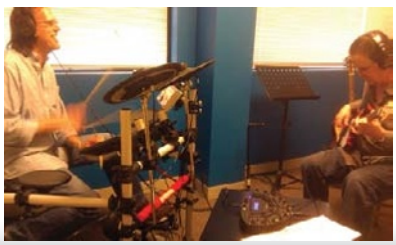

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Cover photo by **Joshua Dalsimer**

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From the Editor

As Devo will tell you on page 36, the promo campaign for their new album was simultaneously a parody and an actual use of corporate marketing techniques. That got me thinking about our love-hate relationship with advertising. For example, we DVR shows so we can skip the commercials, but an icon like the Geico gecko gets our fingers off the fast-forward button. Curious as to how this played out in the music gear world, I posted a poll on our website asking what medium of ads you're most likely to look at, not just skip over. The margin by which print ads came first (see results at right) exceeded my most optimistic hopes. I have theories about *why* this is so, but you tell me. Hit me up (using any means from the "Connect!" chart at left) with a few choice words about what ads earn your attention and what kinds just tick you off. It's your chance to tell the keyboard and pro audio industry how best to talk to you, and I'll personally vouch for the fact that its people listen a lot harder than anyone trying to sell you car insurance.

Stephen Fortner

SOAPBOX

While I appreciated Francis Preve's review of the Roland SH-01 Gaia in the July 2010 issue, I was surprised that the synth was compared to the original (and long gone) SH-101 without a word about the synth the Gaia is actually replacing: the recent SH-201, which I own, and which could be considered the first "virtual analog SH-101." I was interested in how the Gaia improves upon it, which I assume it does since it streets for about $200 more than the 201. Your reviewer seemed completely unaware of the 201's existence. As a result, I'm left to sit with your review and my synth and work out what may or may not be different. Not a major problem, but I expect to find such info in product reviews. Since dealers still have SH-201s in inventory, I'm guessing a lot of other potential buyers would like to know the differences as well. Bob Bittner

While comparing the Gaia to the SH-201 would've been apt, the Gaia's voice architecture has much more to do with the original SH-101 than with the 201. Had I written the SH-201 review that appeared in the Nov. '06 issue, I would've been inclined to compare it head-to-head with a JX-3P, which more closely resembles its architecture. So, we focused on the essential question about any virtual analog synth: Does it sound real? With a restored SH-101 in my studio, we felt it was in our readers' best interest to devote the page real estate to that issue. That said, we think the Gaia gives you a lot better than $200 more sound-making power compared to the SH-201, so if you're thinking about upgrading, you won't regret it. Francis Preve

The Poll

What sorts of ads for musical gear are you most likely to read?

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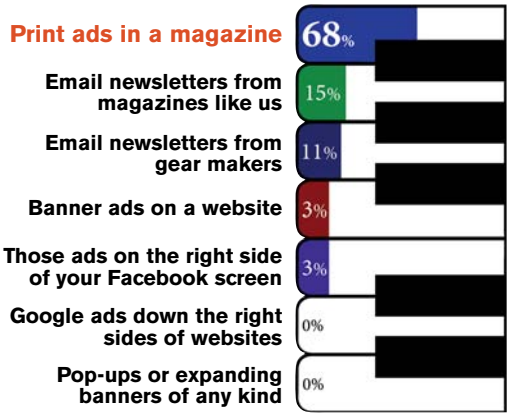

Reader Workbench

Stringz 'n' Blingz!

Before

After

I like vintage gear and I also like building stuff, so when a 1978 PAiA Stringz 'n' Thingz came my way, I set out to completely overhaul it—then improve on it. The overhaul involved a new case and replacing the aging electrolytics. The improvements were more substantial—replacing the 37-key Pratt-Read keyboard with a 44-key Yamaha action and adding circuitry for the extra notes, crystal-controlled tuning, individual level controls for the violin/cello blend, four chorusing modes, keyboard split for the piano voice, and a flute voice.

The biggest addition was an analog effects section for morphing the flute into something less organ-like. First in the chain is a wave folder to add harmonics. It can be set to a constant depth or modulated by an LFO, AD envelope, or both at once. Next, the audio passes through two VCAs. The first is modulated by an LFO to any depth from zero to 100% (pulsing). The second VCA is controlled by its own AD envelope.

Everything is analog and adjustable using 27 knobs. The keyboard splits just below middle C. Voices, and whether effects are applied, can be selected separately for each half. Stefan Vorkoetter

For more, visit stefanv.com/stringz.html.

DIG MY RIG!

The worship band I'm in had to play Jaci Velasquez's "We Can Make a Difference." As resident synth guy, I recreated three separate parts for the song. The other keyboardist would do the Rhodes part on a Kurzweil PC1X. I used my ever-faithful Ensoniq SD-1 and Alesis Ion. The octave-jumping part underneath the vocal "*do-do-do*" bits was an Ion program named "Hollow Moog," which is a sine wave patch programmed by one of the talented folks on Yahoo's Ion user group. The high string note held during the chorus was an SD-1 patch I'd edited to take on a Mellotron feel per a suggestion in an early-'90s article in *Keyboard*. The challenging part was the tremolo guitar from the pre-chorus. Some seat-of-the-pants programming involving a guitar patch and rotary effects did the trick. A keyboard split on the SD-1 put the guitar and string patches close together, as I needed to go from one to the other quickly. I've come to appreciate the SD-1's intuitive interface for creating performance setups. A Roland JV-1080 and E-mu Vintage Keys join the party as well. An Alesis NanoVerb sweetens up the Ion and Vintage Keys, and an Alesis DataDisc stores programs for them. Bill Wilcox

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THIEVES LIKE US

Chillwave on the Cheap

What's the grittiest part about being the keyboardist in a broke and perhaps dysfunctional electropop trio? When the cash-strapped singer is looking to pawn off some equipment—say, a Roland Juno-6 that'll fetch a few hundred bucks—it's your cases he'll likely come rummaging through. "Our singer was kind of f**ed up at the time," Thieves Like Us keyboardist Björn Berglund explains. "We used to have a lot of keyboards. He sold them off."

Even on the barest, most portable equipment that no money can buy, the international trio of expats drifting across Europe has created a haunting sound on four records acclaimed for their paradoxical melancholy cheer. Tone generators, samples, and an ancient polysynth—all from the Reagan years—are how Berglund does it. "It's a bit sad," he adds. "We're looking for new synths, but we're on a really small budget here."

If you had the money, what would be your next buy?
We're always looking for vintage keyboards from the '70s and '80s. Like a Crumar Orchestrator—that's more like a string synthesizer with a '70s sound. It's pretty cheap because people haven't really discovered it yet.

If you had to sell it all except one thing, what would you keep?
The Korg Polysix. It's very all-around. You can get a lot of sounds from it. It's quite good for playing live and stands up well on the road. We've had this keyboard for eight years now and we've been touring with it all over the world, and it's still working. It's very well built. It's got at least 40 patches and with the older synths, sometimes you don't even have patches.

Any other non-keyboard gear?
We often use a tone generator, the RY30 from Yamaha. It's kind of limited, like a drum machine-slash-sequencer that's more digital sounding—more '90s. It's on a lot of the records, but it's not something you play. You sequence with it.

Where do you pull samples from?
Mostly from old music. We usually take from artists we like. If you listen to "Drugs in My Body," that was a sample from the Durutti Column. [The song was 1980's "Sketch for Summer."] It's quite a different kind of music, but we try to fit it into ours.

Any advice for bands in similar situations–just trying to get by, not being able to afford all the gear you want?
Buy good effects instead of getting an expensive keyboard. You can always get great sounds out of cheap gear. The most important thing, though, is to write good songs. Drew Hinshaw

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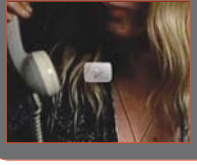

All of Thieves Like Us' videos.

Our original Vintage Gear column on the Korg Polysix.

TROY JAMES SOBOTKA

FRONT LINE ASSEMBLY

Wilhelm Leeb on Analog Versus Virtual

Bill Leeb's 24-year-deep discography with industrial techno project Front Line Assembly (and before that, Skinny Puppy) thrums, buzzsaws, and shrieks like a near-exhaustive history of the synth in EBM—from noisy, atomic-age Doepfer modular racks with spaghetti spilling out of jacks to hum-free soft synths. This summer's release, *Improvised Electronic Device* throbs like it could have fallen out of *The Matrix* and into a sinister, Rammstein-era basement lounge.

Tell me about the synths you use for a record like this.

I'm still a firm believer in stuff like the Pearl SY-1 [Syncussion, shown] and the Oberheim Matrix-12. I also have an OSCar, a Minimoog, a Micromoog, and a Multimoog.

Your Doepfer A-100 modular–that's quite a piece of machinery. Do you prefer to compose on modular synths?

It's just different. I've got a storage room full of old gear from 20 years ago, and I don't know if any of it works anymore. Nowadays with virtual synths, you just pull up the programs and *bang*, you've got it. But those little keyboards . . . every time you turn them on—*if* they work, *if* they tune—it's really labor-intensive. Still, their sounds are better than virtual synths. They have character. They have noise, because they're coming out of a real machine. And they never sound the same twice.

When you're dealing with that much gear, how do you handle option anxiety?

I focus on the songwriting. For me, it's all about that. After all these years of doing it, you just kind of hear things. You know in your head how things are going to work out.

What part of an arrangement or mix usually requires the most attention?

Vocals are the trickiest—that's where you really have to finesse it the most. You can sort of do the words when you're sitting at home listening to the music, but when you get into the studio, things don't always sound the way you envisioned them. I just find that with music like this, it's a work in progress even until the day you do mastering.

When you're so deep into a project, how do you like to listen to it? Do you go sit in your car?

Greg [Reely, engineer] loves Genelecs—he's been swearing by those. We used to use Yamaha NS10 speakers, and I still have a pair. They sound really harsh, but the whole thing is, if [the music] sounds good there, it'll sound good anywhere, right? I have a really nice car stereo. I also have a pair of Tannoys, and between all those, I can get a pretty solid reference. When Greg gives me a rough mix, I can take it home and I can tell, usually right away. Drew Hinshaw

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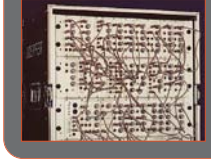

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Visit Front Line Assembly on MySpace.

KEYSTER'S DIGITAL ART AND PHOTOGRAPHY

WEEKEND WARRIOR

Tana Hergenraeder

DAY GIG I recently landed a great job at one of Billings' top architecture firms as a junior interior designer.

HOW I GOT STARTED At age five, I sat down at my grandmother's piano and played "Twinkle, Twinkle Little Star" by ear. My parents wanted to pull me out of dance classes and put me into piano lessons. I was pretty disappointed, but now I can look back and see that they did know best. I wrote my first song at age ten, and have spent the last five years experimenting with my keyboard and Propellerhead Reason.

BAND Black Velvet Undercover is based in Billings, Montana. The band challenges my keyboard skills, and gives me the opportunity to play with experienced musicians who encourage me. Having keys lets us play songs like Journey's "Separate Ways," Bon Jovi's "Runaway," and feature the real stuff in tunes like "Sweet Home Alabama"—the piano! The band has played everywhere in Billings, from nightclubs to rodeo parties. We all have families and day jobs, so we like to stay close to home, but we do travel if the money's right and the party's good.

GEAR Yamaha MO8 keyboard through a Peavey KB5 Amp. We mic the amp with a Sennheiser E-602 and run directly into our Community front-of-house system.

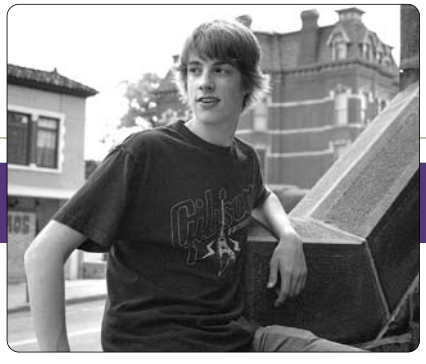
INFLUENCES I have great respect for the late Billy Powell of Lynyrd Skynyrd. To be able to flow like he did on the keys is amazing. Early on, I was inspired by the intensity of Rachmaninoff. At the risk of sounding cliché, my first inspiration was the Beatles. I'm also a fan of Amy Lee and Evanescence, Pink, and Ani DiFranco. Zero 7 is also one of my current favorites.

WHY I PLAY It's what I do. My body breathes through my mouth; my soul breathes through my fingers. I find comfort not only in playing other people's music, but also in writing my own.

MORE AT blackvelvet.us and reverbnation.com/TanaWasTaken Ed Coury

MAJORminor

CALE HAWKINS



Seventeen-year-old soul/jazz keyboardist Cale Hawkins is an old pro at a young age. The high school senior from Bemus Point, New York, has played keyboards since age ten, records and markets his own indie releases, and has already performed at storied venues like Ohio's Rock and Roll Hall of Fame and B.B. King's in Memphis, Tennessee. He heads to Berklee College of Music in Boston next year, where he hopes to create an entirely new genre of music. Find out more at calehawkins.com and twitter.com/calehawkins.

First memory of hearing piano or keyboards and being intrigued: My grandparents and parents always had a wide variety of music playing on their stereos. The first time I heard keyboards must have been in Beatles tracks at around age two. "Good Day Sunshine" and the piano solo in "In My Life" always intrigued me.

Musical heroes: My biggest influence as a keyboardist would have to be Herbie Hancock, yet I draw from artists like Soulive, the Roots, Art Tatum, Thelonious Monk, Chick Corea, Donny Hathaway, and Stevie Wonder.

Why keyboards? Although I play guitar, bass, and drums, I focus on keyboards because so many aspects of them appeal to me. I love the freedom to play any note in an eight-octave range, and you don't have to worry about timbre or embouchure as with other instruments. I also like how there are so many different keyboards that each have a unique sound—I enjoy playing Rhodes, Hammond B-3, and Clavinet in addition to piano.

Favorite style to play? I enjoy soul music the most, but jazz is definitely a close second.

How important is traditional music training? Extremely so, in my opinion. After studying theory for several years, it gives you a sixth sense about music. It's great to hear chord changes in songs and be able to say, "Oh, that's the minor five chord to the root seventh, to the fourth, then it's heading to the five chord with a flat ninth."

Read or play by ear? Although I can read music, I enjoy playing by ear more.

Keyboards owned/wanted: My favorite keyboard would have to be my Yamaha Motif. My dream keyboard? An original Fender Rhodes. I'd love to have that authentic '70s sound.

Role technology plays in your music: I'm proficient in Pro Tools, Logic, and Reaper, and have produced, engineered, and marketed two all-original albums on which I play all the instruments. I constantly use these programs for demo ideas as well. Keyboard technology is also huge—my Motif provides several hundred tones, and I love my new Hammond XK-1's emulation of the classic B-3 sound. Jon Regen

Know a young keyboard wizard in your area? Let us know via email, Facebook, or Twitter, and they might be our next MAJORminor!

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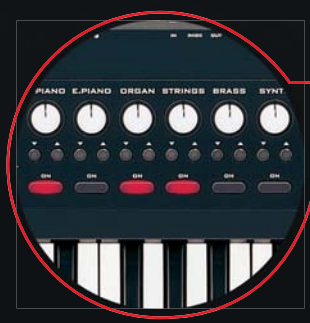

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*Bonus FREE software runs your PS60 as six "hardware plug-ins" under any recording program!

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THE EDITORS' PLAYLIST

Jon Regen

TIM ALHOFF TRIO
Prelude

While on tour in Germany myself, I discovered Tim Allhoff. The winner of the 2010 New German Jazz Award, Allhoff stands firmly at the new dawn of modern jazz piano. Check out the track "Winzigwinzigklein" for an example of how he masterfully mixes classical cadences, Latin drum grooves, and seductively shifting piano harmonies. Truly a talent deserving wider recognition, Allhoff proves that great music knows no boundaries. (Double Moon, timallhoff.com)

ROSEY CHAN
One

Pianist Rosey Chan knows a thing or two about shaking things up in the halls of classical music, with genre-defying, multimedia live shows that captivate the eyes *and* ears. On her Sting-produced release *One*, Chan eschews convention again, purposefully programming Bach, Bill Evans, and Tom Waits alongside one another. Listen to her affecting reading of Evans' mournful "We Will Meet Again," for a glimpse into Chan's ever-inclusive musical world. (Ho Hum Records, roseychan.com)

ALPHA REV
New Morning

Austin's Alpha Rev hits the sonic ground running with *New Morning*, their major label debut. Featuring an unabashed blend of artful roots-infused rock, the record brims with soaring choruses and aural attitude, courtesy of legendary producer David Kahne. Check out the title track, as well as "Phoenix Burn" and "When Did I Wake Up" for a master class in power-pop panache. (Hollywood Records, alpharev.com)

Robbie Gennet

SCISSOR SISTERS
Night Work

This dance-funk spectacle features tons of synths and truly catchy songs. "Fire With Fire" sounds stadium-ready with the biggest hook on the record, while shades of disco, new wave, and techno abound, wrapped in racy lyrics and the band's trademark camp. The thumping "Any Which Way" and closer "Invisible Light" are epic dance jams, while flavors of LCD Soundsystem ("Running Out") and the Killers ("Fire With Fire") permeate the '80s-grounded album. *Night Work* will bring out your inner freak. (Universal, scissorsisters.com)

JOE GENUARDI
Last Round

Don't let the cover pic of Joe holding a guitar fool you; the man is a talented pianist who also plays most of the other instruments on his record. *Last Round*'s direct influences might be Billy and Elton, but Genuardi has his own piano rock style, from the bouncy pop of "Time Goes On" to the arpeggiated licks on "Destiny." Some really nice ballads balance out the proceedings, and Genuardi's vocals throughout are quite melodious. *Last Round* debuts a promising artist with a bright future. (joejams.com)

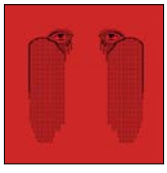
JOHN ZORN AND THE DREAMERS
Ipos

Avant-garde composer Zorn has a storied career spanning a wide variety of genres, with a focus on Jewish themes. His work with the Dreamers includes the fine piano, Rhodes, and organ playing of Jamie Saft, who gives the otherworldly tunes a transcendent lift. Guitarist Marc Ribot's surf-rock lines and Kenny Wollesen's drum grooves unleash the music from any one genre, but Saft's contributions on "Hashul" and "Zavebe" bring the keys to the foreground and showcase his nimble melodic style. (Tzadik, myspace.com/johnzorn)

Grace Larkin

RYUICHI SAKAMOTO
Playing the Piano and Out of Noise

The innovator hits us with two new albums in one. *Playing the Piano* is a taste of the composer's haunting solo piano pieces, including some of his famous film themes and earlier works. *Out of Noise* does a 180, taking us on an electronic exploration of the questions "What is music?" and "What is noise?" Packaged together in an all-encompassing view into the musician and eco-activist, the albums are a glimpse into another reality impossible to turn off. (ECM, sitesakamoto.com)



BEAR IN HEAVEN
Beast Rest Forth Mouth

Grizzly Bear and the Ramones must have shacked up in a hotel room and made sweet love, because Bear in Heaven is without a doubt their new offspring. Perhaps Pink Floyd threw in a few swimmers themselves, accounting for the psychedelic tinges of progressive, synth-infused rock. In spite of this multi-parenting, the band has raised itself to be individualistic and unique. The results are thought provoking, dance eliciting, and wonderfully difficult to pigeonhole. (Hometapes, bearinheaven.com)

PINETOP PERKINS AND WILLIE "BIG EYES" SMITH
Joined at the Hip

The Grammy-winning blues and boogie pianist joins forces with the former Muddy Waters drummer to create an album to keep by your side at all times—a record for all moods. Heavily blues influenced, *Joined at the Hip* fires away with "Grown Up To Be a Man," a straight-eighth shuffle that shows off Perkins' chops and Smith's impeccable groove. Each song is so strong and lyrically emotive that I couldn't get my hand off the repeat button. A powerful collaboration. (Concord, pinetopperkins.com, williebigeyessmith.com)

What's on your playlist? What should be on ours? Let us know by email or Twitter, or at forums.musicplayer.com.

no boundaries

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NEW GEAR

by Stephen Fortner

XILS LAB POLY KB

Concept: Plug-in replica of the extremely rare RSF Polykobol synth.

Big deal: Sequencer plays pitch and morphs waveforms of eight voices independently. Crazy-deep modulation matrix. The Polykobol didn't sound like any other synth, though "Rhodes Chroma meets Elka Synthex" isn't too far off.

We think: It's beyond cool to have this gem of a synth in your Mac or PC.

List: $184 | xils-lab.com

REALSAMPLES ORPHICA PIANO

Concept: Very rare 18th-century portable piano for HALion, Kontakt, and GigaStudio.

Big deal: Around 30 of these instruments survive today, and RealSamples have meticulously sampled a prime specimen.

Sounds like: A cross between a mellow piano and a Clavinet with all the filters open.

$127 | realsamples.net

NOVATION DICER

Concept: Cue and looping controller for Serato Scratch Live.

Big deal: Sized and shaped to fit on the corner of a turntable, CDJ, or laptop. Pads glow red, green, or orange to indicate hot cue, loop roll, or auto-loop modes. No-hassle integration with Serato. Works as MIDI controller for other software.

List $125.99/pair | Approx. street: $99/pair
novationmusic.com

SONIVOX REGGAETON INSTRUMENTO VIRTUAL

Concept: Reggaeton soft synth based on Sonivox's Playa engine.

Big deal: Over 7GB of beats, instruments, loops, and construction kits. Pad-based, MPC-style interface. Easy MIDI learn. Tempo-synced roll and retrigger. Keys mode for playing it keyboard-style.

Formats: Mac or PC. AU, RTAS, VST, and standalone.

List: $149 | Approx. street: $100 | sonivoxmi.com

See new gear press releases as soon as we get them at keyboardmag.com/news.

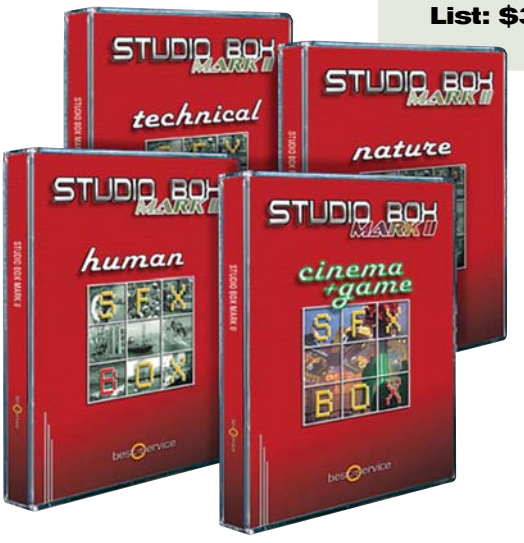
iKEY AUDIO RM3

Concept: Rackmount stereo USB and SD card recorder.

Big deal: Records in MP3 format at up to 320kbps, or 16-bit/44.1kHz WAV. Line-level 1/4" ins on front, plus RCA ins and XLR combo input on back.

We think: For board tapes or break music, this inherits the slot in your P.A. rack where the cassette deck once lived.

List: $319.99 | Approx. street: $200 | ikey-audio.com



BEST SERVICE STUDIOBOX MK. II

Concept: Comprehensive sound effects libraries.

Big deal: Four volumes cover nature, human activity, technological/industrial, and cinema/video game sounds, all in WAV format.

We think: The full set is a great value for desktop post-production pros and indie filmmakers.

Set of four: $421.43 | Separate volumes: $157.38 each
bestservice.de

MOTU MICROBOOK

Concept: Ultra-compact USB audio interface that doesn't skimp on sound quality.

Big deal: Guitar and phantom-powered mic inputs, balanced 1/4" stereo line ins and outs, 1/8" stereo mini in, and S/PDIF digital out. Includes CueMix monitoring and AudioDesk DAW, plus audio analysis software suite. Software-controlled analog trim on mic input.

Works with: Mac or Windows; CoreAudio, WAV, and ASIO.

List: $269 | motu.com

ENDLESS ANALOG CLASP

Concept: This "Closed Loop Analog Signal Processor" lets you track through your multitrack analog tape machine to your DAW in real time.

Big deal: Sample-accurate sync uses no SMPTE. Seamlessly syncs tape and DAW as you track, overdub, or even edit in your DAW's arrange window.

We think: This isn't for spare-bedroom studios, but for pros who track to tape for warmth, then dump to a DAW for editing, it rolls those two actions into one. Revolutionary.

List: $7,995 | endlessanalog.com

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5 Ways To Play Like KENNY KIRKLAND

George Colligan has worked with Cassandra Wilson, Buster Williams, Don Byron, Ravi Coltrane, and many others. Most recently, he joined drummer Jack DeJohnette's new quintet. His latest release is *Come Together* on the Sunnyside label. Colligan is Assistant Professor of Jazz Piano at the University of Manitoba. Find out more at georgecolligan.com. Jon Regen

Kenny Kirkland was a true keyboard phenomenon. From his post-bop piano proddings with trumpeter Wynton Marsalis, to his famed, genre-defying keyboard work with Sting and his own small groups, Kirkland's singular sound changed the landscape of modern music. The collective keyboard community was shocked and saddened by his untimely passing in 1998 at the age of 44.

Kenny Kirkland was truly one of my piano heroes. Hearing his unique harmonic and rhythmic vocabulary on Wynton Marsalis' seminal album *Black Codes from the Underground* was a revelation for me. His playing had historical and technical depth, but also a tremendous wellspring of invention and funkiness to it. Listen closely to Kirkland in action and you'll hear everything from Bud Powell to Bela Bartok to James Brown. Let's look into the rhythmic and harmonic hallmarks of Kenny Kirkland's playing. George Colligan

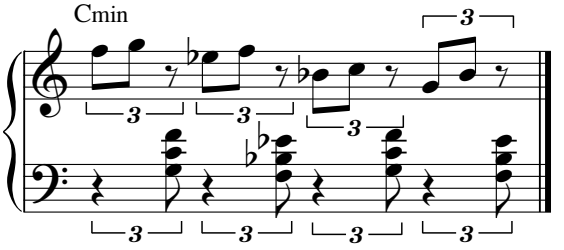
1. Swing.

Kirkland, like most of my favorite jazz pianists, has a unique way of swinging his eighth-notes. My theory is that there's always an *implied* triplet feel in his playing, even when he plays only eighth- or quarter-notes. Also, some of the eighth-notes are almost ghosted, *i.e.*, more felt than heard. The best way to capture this kind of swing feel is to listen and try to internalize it. A tune like Kirkland's own "Steepian Faith" has passages similar to this example that illustrate his buoyant phrasing.

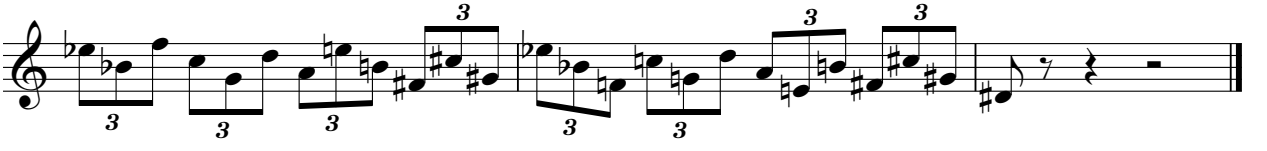
2. Triplet Feel.

Kirkland might play something like **Ex. 2a**, where he plays two triplet eighth-notes in the right hand, and the chord on the third triplet in the left. He might do this diatonically, pentatonically, or even more chromatically in nature to build tension. **Ex. 2b** is a Kirkland-esque fourth pattern that resembles something you might normally hear a saxophonist or other horn soloist play.

Ex. 2a



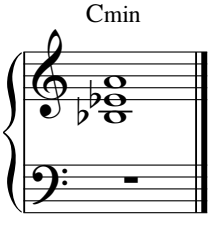
Ex. 2b



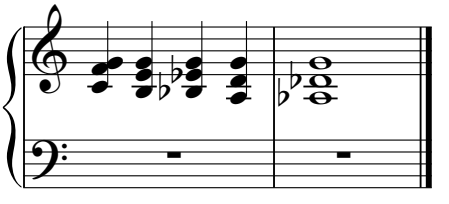
3. Harmony.

If you saw my "5 Ways To Play Like McCoy Tyner" lesson in the June '10 issue, you'll remember that voicings in fourths are a common sound in the modern jazz piano language. But Kirkland uses them in a surprising way—while Tyner might play a voicing with a tritone and a perfect fourth (with the fourth on top), Kirkland will invert it and put the *tritone* on top (**Ex. 3a**). He also might keep the top note constant and move the inner voices (**Ex. 3b**). Kirkland also might play polychords as in **Ex. 3c**, where the *F♯/E* could be played over an *EMaj7♯11* or an *E7♯11*. The *Edim7/Fdim7* could be used, believe it or not, over a *G7* chord. This harmony is derived from the *G* diminished scale: *G, A♭, B♭, B, D♭, D, E*, and *F*.

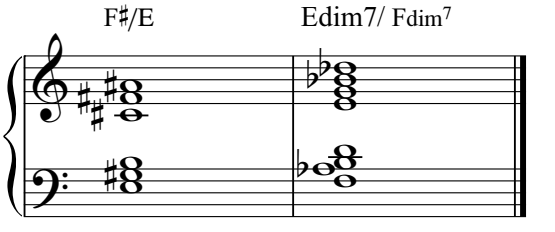
Ex. 3a



Ex. 3b



Ex. 3c



4. Comping.

Again, whether he was comping for Wynton Marsalis, Michael Brecker, or Sting, Kirkland had an outstanding rhythmic feel. **Ex. 4a** is typical of Kirkland's comping with someone like saxophonist Branford Marsalis. Often times, he alternates between two fourth voicings on the same chord. **Ex. 4b** shows how he might play those voicings polyrhythmically to create tension–a Kirkland trademark.

Ex. 4a

Ex. 4b

5. Signature Phrases.

Every musician has their own signature phrases which makes their sound identifiable, and Kirkland is no exception. **Ex. 5a** is a typical Kirkland phrase with a bebop shape to it. **Ex. 5b** has a mixture of pentatonics, bebop, and chromaticism. **Ex. 5c** uses that diminished scale again. This is a good one to work through all keys, and to sequence in minor thirds.

Ex. 5a

Ex. 5b

Ex. 5c

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Kenny Kirkland playing "Steepian Faith."

Kenny tearing it up with Sting on "Been Down So Long."

George Colligan plays audio examples of this lesson.

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JOHN ABBOTT

Instrumentalist and arranger **Gil Goldstein** started accordion at age five, and entered jazz as a pianist in the 1970s, performing with Pat Martino, Billy Cobham, and Jim Hall. In the early '80s, Goldstein began working with legendary bandleader Gil Evans, and his interests turned to arranging. Most recently, Goldstein's arrangements have been featured on recordings by David Sanborn, Michael Brecker, and Chris Botti, as well as upcoming projects by Esperanza Spalding and Bobby McFerrin. Jon Regen

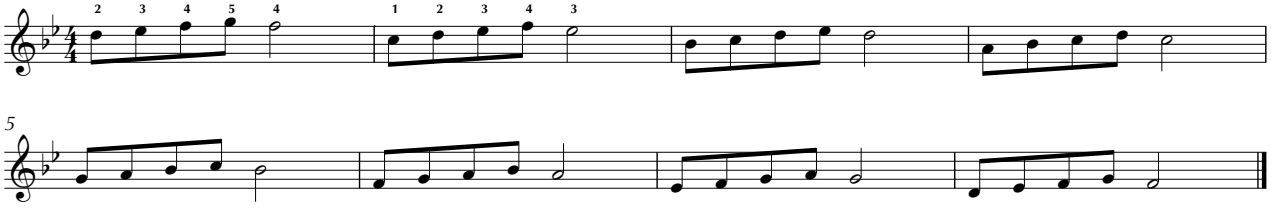
THE WORLD ACCORDION TO GIL

The often-misunderstood accordion is now taking its rightful place in the halls of modern music. The consummate world traveler, the accordion is basic to the music of Europe, South America, and beyond. In the United States, esteemed pop artists like Paul Simon, Bruce Springsteen, and Bruce Hornsby have all featured it in their live and recorded efforts. It has also been featured prominently in jazz, blues, and cinematic music. It's a nimble beast, able to leap tall musical passages with its singular, sinewy sound. So for those who've been curious, here's a quick-start guide to this truly universal instrument. Gil Goldstein

1. Bellows Workout.

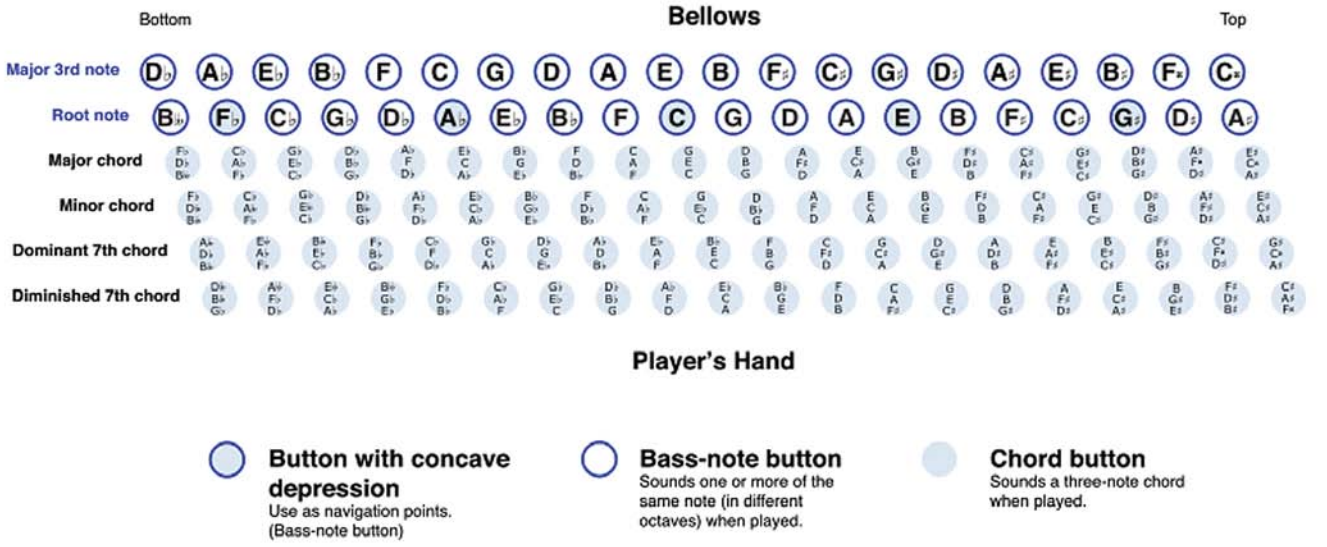
One thing that makes the accordion unique is its system called the *bellows*, which moves air throughout the instrument by pumping it over the casings of metal reeds. Because of this moving air, when you depress a key or button, a particular note sounds. Often times, you start playing with the bellows closed. When you begin a musical phrase, you use your left hand (which is strapped to the bass mechanism housing) to open the bellows. One secret is not to pull too hard, but instead, to let the weight of the instrument help. I generally like to sit when I play, resting the instrument on my left thigh. That way, I can maximize the gravitational effect. To close the bellows, you tilt the instrument to the right with the body and both arms, letting the bellows fall closed, applying only slight pressure with the inner part of the wrist and forearm.

Here's a five-note, right-hand phrase to help you practice the bellows. Play this at a medium tempo, and stay on the last note until you come close to the end of the open or closed position of the bellows, then *change* directions. I recommend you finger each phrase with an open hand and use no crossing of the thumb–try 2-3-4-5-4 or 1-2-3-4-3. Use this fingering even on the phrases that start with black keys–just put your thumb up there! We're not taught this in piano lessons, but it's quite comfortable once you get used to it. This is a lot like the way that guitarists and bassists can play a similar shape at any point on their instruments' necks.



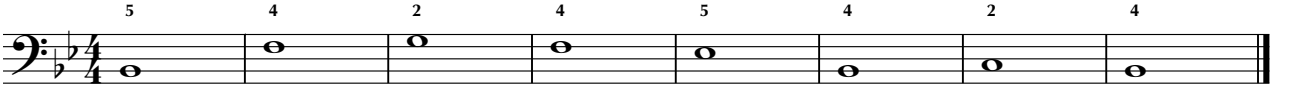
2. Button Up!

The buttons on the accordion can play everything from single-note bass lines to full chordal accompaniment. The most popular accordion button layout in America is called the *Stradella* system, which features two rows of single-note buttons arranged in fifths, known, respectively, as the *bass* and *counter-bass*. The *bass* row is the second row down, with its central *C* usually marked by a rhinestone. The neighboring *A*♭ and *E* buttons are also marked. The *counter-bass* is the top row, and is a major third away from the bass row. Below the bass row's *C* are chords in the following order: major (*C, E, G*), minor (*C, E*♭*, G*), dominant seventh (*C, E, B*♭, no *G*), and diminished (*C, E*♭*, A*, no *F*♯). Relative to each neighboring bass button, these chord shapes repeat in each key.



Try playing this repeating shape in the left hand, starting on the *B*♭, two notes down from the *C*. First, locate the *C* with your middle finger, then place your hand over the buttons so that finger 4 hits the *F* and finger 5 hits the *B*♭. Next, play *B*♭*, F, G, F* by using the fingering 5-4-2-4. Next, let your pinky find the *E*♭ (again, two notes down from the last note you played: *F*), and play the same shape starting on *E*♭. Like the previous right hand exercise, start with the bellows closed and play each note, this time, the whole length of the in or out motion, then change directions and switch to the next note. Let your left hand guide the instrument so that you have freedom and mobility in the fingers to play the notes.

all notes played on the second line down (the primary bass)



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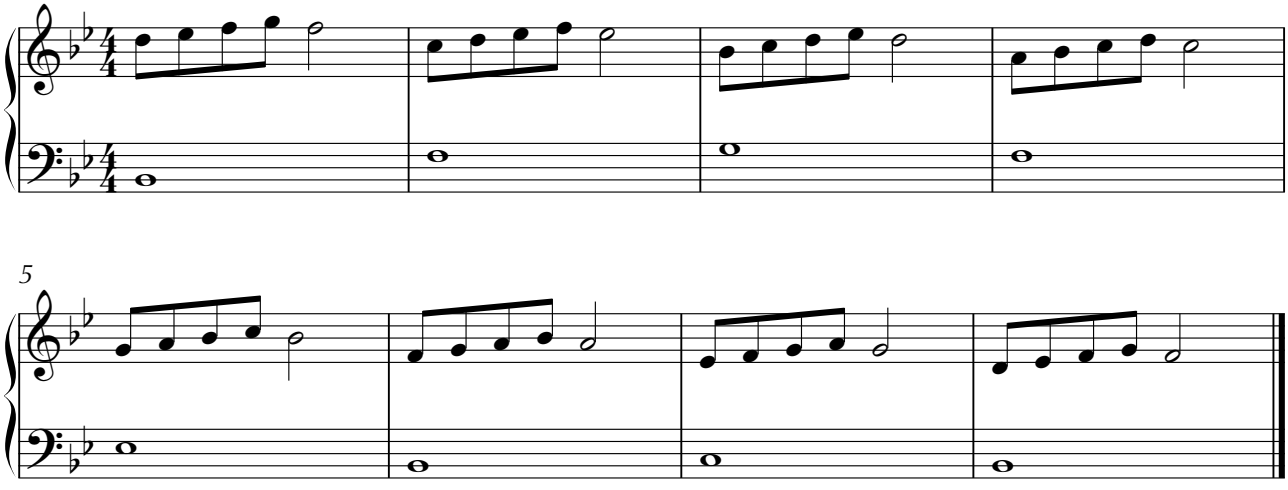
Audio examples recorded by the author.

Videos: Gil Goldstein with Bobby McFerrin and Pat Metheny.

Gil's Choice: Victoria Accordions

3. All Together Now!

Once you have practiced both hands independently on their own, try putting them together. Play this *slowly*, taking time to get the feeling of the bellows and how it affects the accordion's sound.



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Session Sensei columnist **Scott Healy** is a gifted multitasker of a musician known for his burning work on TV with Conan O'Brien since 1993. Visit him at bluedogmusic.com. Jon Regen

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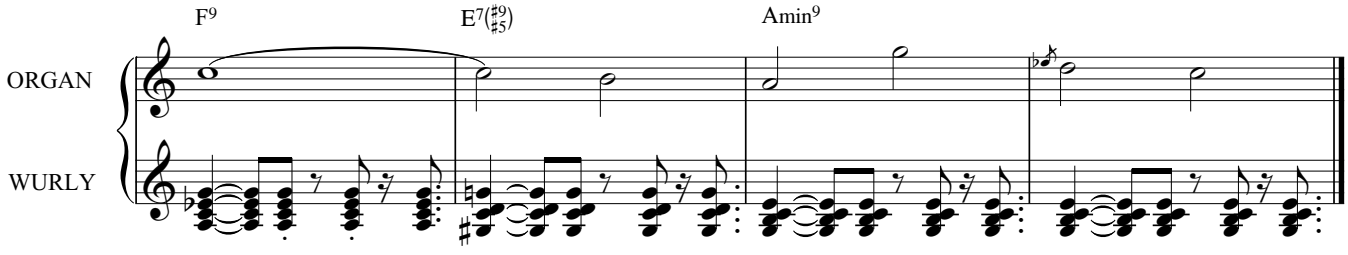
Often, our jobs involve playing multiple keyboard parts at once. As important as the music itself is, it's also vital to make sure that your multi-key rig works ergonomically with both your body and playing style. Keeping your body relaxed even when your keyboard parts are on fire can go a long way towards minimizing tension—and maximizing playing power. Here are four two-fisted techniques to get you up and running. Make sure to check out storied players like Benmont Tench and Chuck Leavell to see the Samurai Keyboard Code in action! Scott Healy

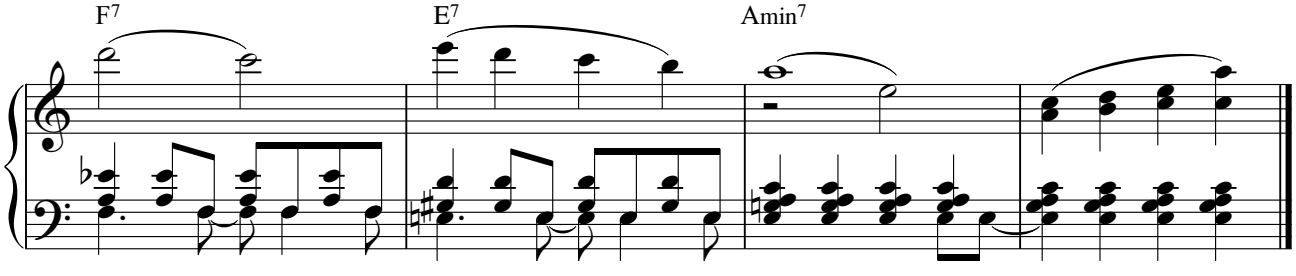
Ex 1. Right hand organ lines, left hand Wurly comps.

Here's the always funky marriage of Wurlitzer EP and Hammond organ. I put the volume pedal for my organ under my right foot, like on a real B-3, so I can really ride the level. The organ's expression pedal is a huge part of its human sound, so be sure to make it part of yours. Single lines work great on the organ, especially if you're laying them down hard with the left hand on the electric piano. I like to control Leslie speed with a switch by my left foot; traditional B-3 cats prefer the "half-moon" switch near the left hand.



Ex 2. Right hand string line, left hand piano.

Piano and strings is one of the most called-for multi-key combinations, so you need to be able to execute it smoothly. Again, volume and blend are paramount. Strings can overwhelm the mix if you don't use them sparingly. Some players like to control their string levels with a volume pedal at left, freeing up the right foot for the piano sustain pedal. I like a string sound with a good amount of velocity sensitivity–that way I can control the level by touch.



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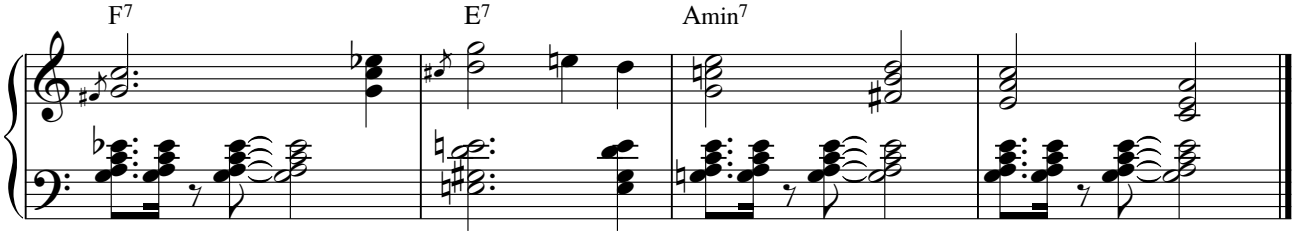
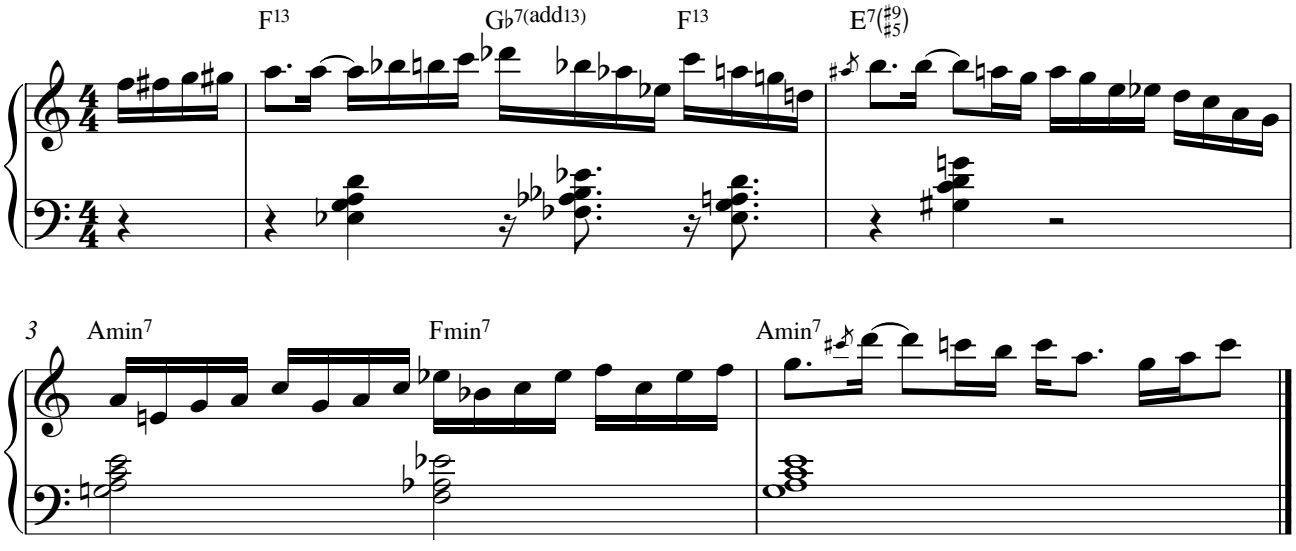
Ex 3. Right hand organ chords, left hand piano comping.

Organ and piano—perfect together! Less is more when it comes to voicing organ chords over piano. Use voice-leading and link the upper notes of the organ chords for a legato effect. Again, don't forget to ride that volume pedal. Think of what two individual players would do, and be both of them yourself. You're creating a musical dialogue between your two hands, so keep things simple but effective.



Ex 4. Right hand synth line, left hand Rhodes.

Synth and Rhodes can be a symphony unto themselves. Maybe you've got a difficult prog tune with multiple parts, or you're soloing on synth with your right hand while comping with your left. Balancing sound levels between your multiple keyboards is a huge secret to their success. Solo lines should be loud and proud. Experience will give you a feel for grabbing wheels and sliders to control pitch-bend, modulation, filters, and so on, all while keeping your chording constant.



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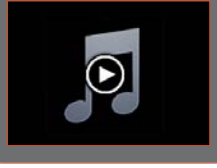

Scott Healy plays multi-keyboard audio examples.

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DAVID ATLAS

Left to right: Bob Casale, Gerald Casale, Mark Mothersbaugh, and Bob Mothersbaugh.

DEVO

The Masters of Subversive Synth Rock Return

by Stephen Fortner

The first thing you need to know about Devo is that their creative collaboration was forged in the aftermath of the 1970 shooting of unarmed students by the Ohio National Guard at Kent State University, where principals Mark Mothersbaugh and Gerald Casale were studying art and music. Rather than waving a middle finger directly at the establishment as the hippies of the day (and punk rockers of just a few years later) did, they crafted their artistic rebellion around a more longitudinal and thus more effectively subversive statement: Human evolution had not only stopped, but was beginning to go backwards. This message has since been the cornerstone of their multimedia mayhem.

What makes Devo *sound* rebellious has always been their unlikely juxtaposition of surf-punk guitar hooks with mechanized beats and plenty of buzzing analog synths. On *Something For Everybody*, that blend reaches new heights of refinement, making their first new studio album in over 20 years quite possibly their best ever. You can giddily thrash around your room to these songs, or listen to the social commentary of the no-apologies lyrics. If you're doing both, their plan is working.

Mark Mothersbaugh, Gerald Casale, and Bob Casale hosted us at Mutato Muzika, the radioactive green, carousel-shaped lair where they've also done scores for everything from Nickelodeon's *Rugrats* to Wes Anderson's celebrated comedic dramas. Is de-evolution real? Probably, but the fact that the band is in such top form proves that some life forms are immune.

It's not about record companies; it's about finding other avenues to market your music." –Mark Mothersbaugh

Stephen Fortner: The first question on many readers' minds might be: Why now, and what was the impetus?

Mark Mothersbaugh: There were a number of things. I mean, we've been playing live for a bunch of years. But I think a lot of it had to do with the decomposition of the record industry as we knew it. We finally got to the point where we couldn't take it anymore, but it also seemed like all sorts of new possibilities were opening up.

One day, an ad agency called Mother wanted to license one of our songs for a Dell computer commercial. We said, "How about a *new* song?" They said, "Is there such a thing?" and we said, "There could be!" We had some stuff we'd been fooling around with at sound checks, and it gave us reason to put together the song "Watch Us Work It." It was a pleasant experience.

Gerald Casale: It made us remember that it *is* possible to make money from music . . . sometimes.

MM: What got us interested in doing a whole *album* was talking to [Swedish alt-rockers] the Teddybears about remixes. They were saying something like, "You know, we just put one out last year and we've sold 35,000 records." We're thinking, "We did that out of a bedroom in Akron, Ohio, when we had Booji Boy Records—why would we go back to that?" Then they said, "But we've already licensed the music for over five million bucks." So there's your business model. It's not about record companies; it's about finding other avenues to market your music. You know, when we first started, we had all these big ideas about a Devo TV network and about doing films. As a matter of fact, we thought we were going to be making product for Laserdiscs.

SF: Those platter-sized optical videodiscs?

Bob Casale: Yeah. When we were starting, they were "the future," but supposedly in the next year or two, and it took another ten years or so before home video would take off.

MM: I still have a Laserdisc player and a collection! [*Laughs.*] Because there was no MTV back then and we made all these films with our songs, we really thought that was what we wanted to do.

SF: The "Jocko Homo" film clip was one of the first "music videos" I ever saw. It blew my mind. . . .

MM: People have always made films to music. Duke Ellington did it. The Beatles did it. It was just that we were already thinking of it as . . .

GC: . . . as the only way it would be presented.

SF: The album's marketing campaign, with the words "Devo, Inc." and this CEO guy who has a head shot on your website—it struck me as wonderfully ironic that you're mimicking corporate means of generating a fan base and "brand identity." Surveys, focus groups. . . .

MM: We're making fun of them but at the same time, utilizing them. We're actually curious. Admittedly, 40 years ago, you'd talk to people about de-evolution and they'd think you were crazy or just had a bad attitude. Now, we're a question on game shows. "Devo" is part of the vernacular. At one time, we were very insular and protective. Now that people have an idea of what *they* think de-evolution is, it's more interesting to invite them to have an opinion about what we're doing. People think about things in ways that we wouldn't; they hear things in the music that we don't.

SF: How did that play out on the level of songwriting and production?

MM: For starters, with the people who've been working with us on remixes. [Producer] Greg Kurstin took a lot of the drum tracks we'd recorded and reused them as triggers, for instance, as opposed to using the drums we originally recorded.

GC: That's something we never did before—just hand off our stuff to somebody and say, "Show us what you'd do." It's been really interesting to get stuff back.

MM: Even back when we worked with people like Brian Eno, we were really protective of our stuff. I remember being over at the studio and we'd all be sitting there listening to a mix. Brian would push a couple of faders up—things he'd recorded on his synths or extra singing. We'd

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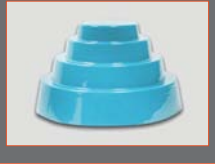
Exclusive video tour of Devo's synths and studio with Mark Mothersbaugh!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Synth secrets from producer Greg Kurstin.

stand there and everybody would be looking forward like everybody does when they're listening to a mix, you know. Then, one of us would sort of reach over and pull the Eno faders back, and he'd look over and noticed that we'd just . . .

GC: Removed him.

MM: And nobody would talk about it directly! [*Everyone laughs.*] Eno had a lot of stuff there at Konrad Plank's studio. They had a lot of modular things but he had his Synthi AKS—that suitcase synth—and he did a lot with tape delays, as not long before, he'd done *Music For Airports*. I remember once we were all holding pieces of tape that were 20 feet long and going around the spindle of some echo machine.

SF: Did such a contribution ever surprise you in a good way?

MM: Eno did something on "Jocko Homo" with monkey chants. I don't know where he recorded them, but it sounded really good, and he *timed* it. That wasn't easy then. You didn't have digital gear, but he timed the monkey chants to play in sync with the song, so we kept that. That was great.

DAVID ATLAS

Mark Mothersbaugh with (top to bottom) MicroKorg, Minimoog Voyager, and vintage Minimoog D. Bob Casale on Korg TR.

Point being, anybody we hired as a producer probably got very frustrated. Roy Thomas Baker just stopped showing up at the studio after about three weeks, so they were there in name but not always getting to do what they do best. So this time around we thought, why not see what happens if we let people who grew up with Devo have their way with this stuff? I mean, nobody has done anything as radical to our tunes as what we did to "Satisfaction" from the Rolling Stones. The closest was Polysics, who covered our "Secret Agent Man."

GC: They totally deconstructed it! [*Laughs.*]

MM: I listened to it again today—I love that mix.

SF: What I always really loved about your "Satisfaction" is that through most of it, I'm never really sure where the downbeat is. The rhythm has this Möbius strip quality.

MM: We actually had to play it for the Stones, and Mick Jagger danced around the room and said it was his favorite version he'd ever heard! This was back in the day before they had the parody laws all worked out. Now, there's a much wider interpretation of what you can do before you have to get permission.

SF: When you guys started the band in '73, synthesizers would have been exotic, large, and not that affordable.

BC: Exactly, and not that available. Mark got one of the first Minimoogs that ever became available.

SF: I was wondering when and where you first heard a synth and said to yourself, "I want that sound in what *I* do."

MM: When I was at school, Morton Subotnick visited Kent State, and that was when I really saw one being used and thought it was amazing. The first synth *solo* that ever really inspired me was Brian Eno on Roxy Music's "Editions of You." I think he used an EMS suitcase synth, one with no keyboard on it. You could tell, and it was the best synth solo I'd ever heard. Before that, there was Keith Emerson going *bow-rowr* and Rick Wakeman going *bong-deet-de-bong-bong*, and—not to take away from them as musicians—it all sounded a bit Doctor Seuss-ish to me. Eno found a new vocabulary. You couldn't play those sounds on a keyboard; the notes were sliding all over the place. That totally changed way I thought about the potential of pop music.

SF: Don Buchla famously saw the synthesizer as *freeing* us from the keyboard. The Minimoog and Prophet, on the other hand, were for putting on top of your Fender Rhodes and playing licks on.

MM: Don't forget EML. They were crazy keyboards, almost impossible to tune. I mean, they had a keyboard on them but we just ended up using ours for sound effects.

BC: But they also had a keyboard scaling function—you could slide it such that you weren't playing notes or intervals at all.

MM: You could warp it a tiny bit and it just make it really crazy.

SF: Once you established your own sound, who were the first artists you heard thereafter that reflected that new wave of music—not to call it "new wave," but in terms of new uses for synths?

MM: People like Suicide in New York, and the Screamers out here. Early Human League was different than the Human League that had hits in the '80s. They were half Heaven 17, and were doing much more adventurous music than either band did after they split up.

SF: How did de-evolution, um, evolve as the concept to wrap the band around?

GC: It was always floating around as we wrote songs, and it just gelled. We were interested in playing games with the culture, in being "aliens" who were just observing. That was always a go-to security blanket, and it also fit with what we were doing musically—stripping things down, looking for the antithesis of what was happening on the radio.

To find the musical language that would show people what we were talking about, we'd do things like taping one of [drummer] Alan Myers' hands behind his back and saying, "No cymbals, no fills!" Then we'd argue like a debate team: "If we're riffing in *E*, what's the reason to change to *A*? What's gonna happen? Is it just because you're supposed to go to *A* after eight bars? Let's not." It was like that.

MM: Which *isn't* to say that by looking for a new sound and a new

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DAVID ATLAS

language, we were trying to be obscure. We actually wanted to be commercial at the same time. To be likable.

GC: Well, we knew what we liked and we thought everybody should like it. [*Laughs.*]

SF: On the new record, did the vast plethora of options that both technology and your success now afford you present any challenges—in terms of just picking where to start?

BC: Less than you'd think. It ran the gamut from the way we did it in the beginning, with an old Minimoog, to all the software synths available now.

MM: And folding in circuit-bent instruments that we found. They kind of replaced Jim Mothersbaugh's input. Before there was a term for it, he was our circuit bender in residence.

SF: Were there any soft synths that you found yourself going back to repeatedly?

BC: GForce ImpOSCar. We like the ImpOSCar! Mark ran a real Minimoog through a bunch of effects pedals. . . .

MM: We also programmed a lot. We have a pretty good collection of software here.

BC: Mark was using Logic and I was using Digital Performer. If we used a soft synth that was exclusive to one program, we'd record an audio track and port it over to the other program.

MM: We were always interested in *Keyboard* magazine. We always read it to know what was new and what was happening. We've been using software for scoring so it seemed natural. It was just trying to figure out the balance between software and hardware that was integral to our writing process—like old step sequencers and drum machines. We could easily balance out a software-heavy song with just a couple of out-of-control tracks with circuit-bent gear on them. We kept recording all the time, and Bob would take, like, two minutes of crazy s*** and cut it down to an eight-bar solo.

BC: We really didn't get into soft synths until we got into Logic and Digital Performer at around version 5.

MM: Before that, it was Opcode Vision. We were using rack synths and MIDI for a long time, and we got into soft synths only when we finally gave up on that. We pleaded with [Opcode founder] David Oppenheim. I said, "What would it cost us for you to come rewrite all our stuff so it'd be compatible and updated?" He was like, "Eh . . . I don't even want to do it." So we went, "Oh s***, we have to learn another program!" We'd written so much stuff on Vision—there's probably a couple hundred hours of intellectual property just lost on some computers downstairs.

BC: Unfortunately, any of the audio you did in Vision doesn't translate to anything else because the program kept adding to one long file, then picked it apart for what tracks you needed.

SF: What synth was used for the signature seven-four-one notes in "Whip It"?

BC: It was a Prophet-5 with the oscillators set an octave or two apart. It had a filter and envelopes that did those chime-like things better than the other synths at the time. We had one in '79 and the voltage regulators would freak out about three or four times a tour, and we'd lose all the memory.

GC: "Whip It" was written over a period of August to October of '79. It came from about four different pieces of music, and that synth part was one of the last things to be put on it when we already had the song structure.

MM: Here's another good Prophet story. In 1979, I got hired to score an off-Broadway play with Dean Stockwell and Russ Tamblyn, and I went to Malcolm Cecil's studio in Santa Monica. I set my Prophet-5 on top of the keyboards for [Cecil's famous modular synth] TONTO. I'm looking at TONTO for the first time going, "Wow, that's crazy!" Malcolm comes over and asks me about the Prophet. I go, "Yeah, it has internal memory *and* polyphony!" He's like, *sigh*. It was so sad! He'd invented one of the first polyphonic synths, and his partner was so paranoid someone was going to steal the design that he filled the whole interior with epoxy so you couldn't see what was in there. In two days, it had dried and contracted, ripping all the circuitry apart. He showed it to me.

GC: That's a good lesson about paranoia.

MM: TONTO showed up here about 13 or 14 years ago. For a couple years it was working, and people would come over and find out what it was like to patch a giant modular synth and spend all day getting one bass sound. And they'd go, "Okay, I can understand why we're moving on from that technology." It was so cool to have it here, though.

SF: To finish, I have to ask about the new look of the band. How did the idea of the half-facemasks and the blue color scheme come together?

GC: Well, we needed some age-appropriate clothing. [*Laughs.*] It's a little bit orthodox Devo, a little bit Greek and Roman, and a little bit *Eyes Wide Shut*.

MM: There could be a kids' TV commercial in there somewhere. There's definitely some Hasbro influence.

GC: Yeah, and of course the very grown-up jackets and pants, made with a fabric Bea Åkerlund found. She's done a lot of costume design for Lady Gaga. Speaking of which, I have to hand it to them—her video for "Telephone" actually disturbed me. I thought nothing could disturb me anymore. When they poison everybody in the diner, they poison the dog, too. There's actually a shot of the dog dead. They should've let the dog live. That's how sentimental I've become. k

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Dance

THE POWER OF TEN

Ten years. That's how long I've been writing the Dance column for *Keyboard*. It has enabled so much for me—from meeting heroes, to receiving letters thanking me for my insights, to compiling dozens of columns for my book, *The Remixer's Bible* (Hal Leonard), that I'm truly humbled by the opportunities this column has afforded. In honor of this occasion, I've assembled a grab bag of ten timeless synth and production techniques every dance producer should know. Enjoy. Francis Preve

1. Know Thy Roland Drum Machines

In '80s pop, the sampled sounds of the LinnDrum, Oberheim DMX, and E-mu Drumulator reigned supreme, but in electronica of *all* types, the crown is Roland's. Here are the modern genres associated with each—these are just guidelines and there's tons of room to quibble over details.

- CR-78: Retro synth pop, IDM (intelligent dance music), clever techno.
- TR-808: Hip-hop, retro synth pop, techno, and tech-house.
- TR-909: Rave classics, '90s house, techno, and tech-house.
- TR-606: Techno, tech-house, and IDM.
- TR-707: Retro synth pop.

Roland's legendary TR-808.

2. Roland TB-303 Acid Leads

In addition to forming the basis for the entire acid-house genre and a massive chunk of '90s rave material, Roland's TB-303 Bass Line rose from being a failed attempt at a bass guitar synth to bona fide legend status—right up there with the Minimoog. It also inspired Propellerhead ReBirth, which opened the floodgates to a deluge of dance-oriented soft synths.

Propellerhead ReBirth, a TB-303 clone.

3. The Nintendo Square

Probably the simplest sound ever, this patch always seems to revive itself and remain relevant, regardless of the genre. I've dubbed it "the Nintendo square" because of the thousands of video games that relied on its sound. Here's how it's done.

Using just one oscillator of a virtual or real analog synth, select the square waveform. Open a lowpass filter to maximum, then set the volume envelope to immediate attack, full sustain, and immediate release. For extra street cred, add a touch of bit-crushing to the results.

4. That Trance Sound

It's amazing that a sound can define a genre with minimal adaptation for over a decade. Even if you have only a passing familiarity with trance, you've heard that machine-gunning "dee-dee-dee, dee-dee-dee" riff. This sound evolved out of Roland's "supersaw" waveform, but it's easy to create using more standard means.

Start with two or more sawtooth oscillators, then detune them all in equal amounts—in opposite directions to maintain overall tuning. From there, lower the filter cutoff and add some filter envelope modulation with short decay and no sustain. As your riff plays, simultaneously open up the filter and increase the amp envelope's release time. Slather on some chorus and dotted eighth-note delay for added atmosphere.

5. Sine Wave Bass

Whether it's hip-hop, techno, or house, a sine wave bass is the macho equivalent of the little black dress—essential and eternally in style. For everything from 808-style kicks to booty-shaking bass, the simplest waveform is often the best.

Start with a single oscillator. Set the wave to sine (or triangle if that's all you have, but it's not as pure). Open the lowpass filter to max; if using a triangle wave, close it down a bit to more closely emulate a sine. Lay down a simple drum groove and start playing a bass line. See? For added funk, add some LFO or pitchbend swoops.

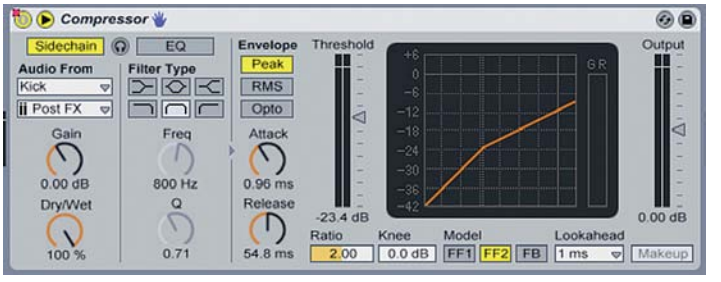
6. Rhodes Comping Chords

Based on jazz and disco, the enduring sound of deep house has remained largely unchanged for nearly three decades. Two key instruments form its basis. One is the Roland MKS-20 digital piano that anchored countless tracks; the other is the Rhodes electric piano. The sound of record labels like Om and Naked often pivoted on the lush sensuality of a great chord progression punctuated by perfectly placed Rhodes stabs. Chorus and delay are the effects of choice here, but to wow your friends with that Steely Dan vibe, try a phaser.

7. White Noise Whooshes

These are a tried-and-true way to add drama to build-ups and breakdowns. In my July '09 Dance column, I gave specific techniques for creating massive noise whooshes. Here's a quick summary of the process.

Start by using a noise generator with no additional pitched oscillators in the mix. Then, create an eight-bar event that plays a single note. The initial result should be an irritating noise blast. From there, use automation to slowly raise the cutoff of the synth's lowpass filter over the course of those eight measures. Adjust resonance to taste—a little goes a long way. Delay and reverb are great ways to thicken the results, and a highpass filter at the end of the chain will tame unwanted lows and chunky lower mids.



8. Sidechain Compression

I'm often asked how to blend kick and bass so that the two don't compete with each other in the mix. Here's the 30-second answer.

If your DAW includes a compressor with a sidechain function, apply it to any bass tracks in your mix. Once the compressors are in place, switch on the sidechain function and assign your kick drum track as its source. Every time the kick hits, the bass will duck in volume slightly. Depending on your genre, you'll need to adjust the compressors' threshold, ratio, and envelopes to taste.

Don't stop at bass, either. Any time you want to reinforce the four-on-the-floor vibe of a track, pads, top loops, drones, and white noise whooshes can all benefit from being ducked by the kick drum.

9. The Eighth-Note Saw Comp

Whether you thank Deadmau5 or blame him, the eighth-note pad/comp is now a staple of EDM vocabulary. Start with a *slightly* detuned (or chorused) sawtooth pad, then lower the filter cutoff and use filter envelope modulation to create a moderately percussive, piano-style envelope. Next, play a simple repeating eighth-note chord progression. Using automation, focus on increasing the following parameters simultaneously: filter envelope amount, filter cutoff, and volume envelope and release. Any subtractive soft synth will do, but for true Deadmau5 authenticity, try FXpansion Strobe (shown) from DCAM Synth Squad.

10. Brian Eno's *Oblique Strategies*

It's not a synth. Or a DAW. Or a beatbox. But it does come as a website, desktop widget, or even a very expensive deck of cards on eBay, and its usefulness is astonishing. Originally printed in 1975 by Brian Eno and Peter Schmidt, each card gives a tip as to how to bust creative block. The strategies range from "Only one element of each kind" to "Honour thy error as a hidden intention" to "Just carry on." To some, these may seem obvious, or abstract, but when you're banging your head against a remix that's due tomorrow morning, they're worth their weight in rare vinyl.

More Online

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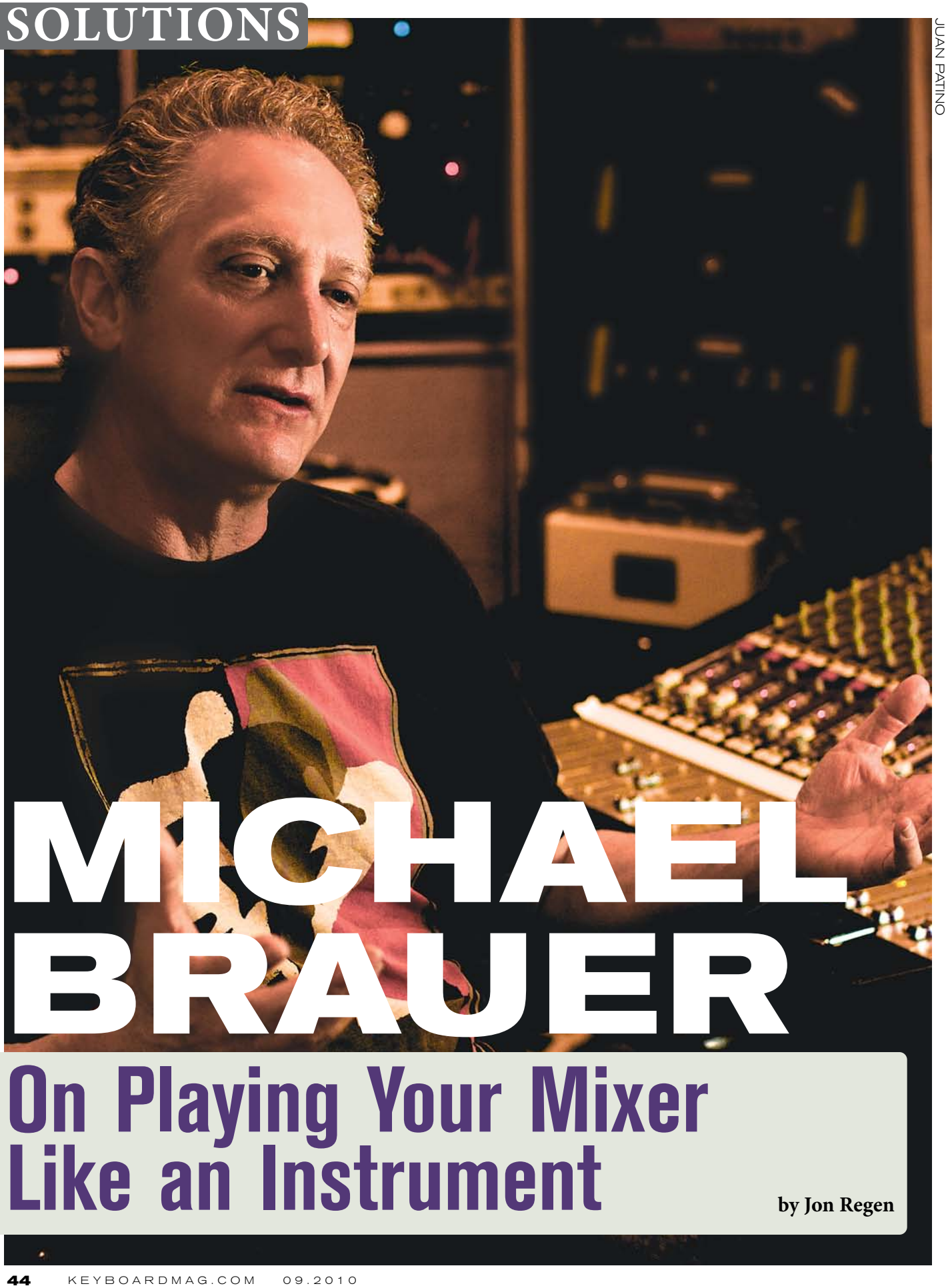
Audio examples by Francis Preve.

Great documentary about the Roland TB-303.

Consult Eno's *Oblique Strategies* on the web.



JUAN PATINO

MICHAEL BRAUER

On Playing Your Mixer Like an Instrument

by Jon Regen

"*This* is what I wanted," beams the multiple Grammy-winning mix engineer from amidst the glow of his NASA-sized collection of vintage outboard gear at Electric Lady Studios. "I wanted a job where I'm totally responsible for my success or failure. If a mix sucks, I'm failing."

It's hard to imagine that as possible. Brauer has applied his sonic sizzle to recordings by Bob Dylan, the Rolling Stones, Coldplay, John Mayer, Ben Folds, and Paul McCartney. Brauer's mixes brim with kinetic energy, as if they're performances in their own right. "I had to find a way to turn the console into an instrument," says the former drummer. "This turned out to be way easier than playing drums, because I only had to use two hands, as opposed to two feet *and* two hands!

"I stopped drumming because although I didn't know what I wanted, I knew what I *didn't* want—to be playing six sets a night in a bar at 50 years old. I didn't want to own a music store or sell gear. I had recurring nightmares about such things. It was like a Hitchcock movie."

Brauer's fascination with recording began while he was still drumming. "In the band, I recorded all our rehearsals using just a couple of mics. I learned to balance sounds simply by having various people hassle me about what they couldn't hear. On the road, I recorded our shows. I was also the sound guy—I'd have all that gear next to me."

A recording course at the Eastman School of Music set Brauer on his way. "I had no idea what anything meant—wet, dry, EQ, cardioid, omni, out-of-phase—but I wrote it all down. I wanted to know if I could still be musical. I didn't want to be a drummer, but I still wanted to play. One night, [legendary producer] Phil Ramone was around, and I'm watching him move his hands, and thinking, 'Wow, he's *playing* the desk!' A light bulb went on."

> "You have to do the opposite of what you're comfortable doing."

Magic at Mediasound

Brauer would cut his teeth at the revered midtown Manhattan recording facility Mediasound, housed in a converted church on 57th Street.

"I started off in shipping," he says. "Mediasound was where guys like Bob Clearmountain were at the time. Shipping was like being an intern—you'd deliver packages to record companies and do odd jobs. I was 25 years old and starting all over again, but I didn't care. I knew what I wanted, and I was in heaven. After 5 P.M., I offered to help on sessions. Harvey Goldberg and Michael Delugg took me under their wings and became my mentors. I basically lived at the studio. Not long after, I got hired as an assistant engineer, got assignments to do little overdubs, and eventually, to engineer my own sessions. Right from the beginning, I just sat at the mixing desk and felt like I was a puppeteer, like I was controlling all these musician marionettes.

"It was all about learning the 'instrument,'" he continues. "My biggest problem back then, ironically, was that I just couldn't hear compression. I'd ask people and they'd play me different compressors, but I couldn't hear the difference. Then one day, it just *clicked*. I thought, 'Wait a minute, this is about an attitude. And *tone*.' I learned how to transfer that irreplaceable spontaneity of being in a killing band, using different pieces of gear and the console to bring songs to life. I wanted to make records that felt like they were being performed onstage. That was my approach right from the get-go."

Brauerize

Brauer's signature sound began with improvising multi-bus compression under fire, and grew into a stable of techniques he collectively calls "Brauerizing."

"I learned the traditional way of mixing," he says, "where you pre-compress a source, then bring it up on the console. No matter what you did with fader, up or down, it was compressed at a given level. Then we'd mix into a stereo compressor, and that worked well for a long time. Until I was mixing Aretha Franklin's "Freeway of Love." Narada Michael Walden, the producer, wanted way more bottom end. As I added bottom, the vocals got smaller, because compressors react to lows more than to highs. So I'd try to bring the vocals up, and the bass would get smaller. Nobody else seemed to be having this problem, but I was, and it was terrifying. I had to find a solution.

"I was working at Right Track Studios in New York, and they'd just gotten an SSL 6000, a movie console. It had three stereo busses, from which you could choose, then sum to the final stereo bus. And I thought, 'This is like being in a band. The drummer and bassist can get a sweet sound without the guitarist or vocalist pushing them around. I immediately started thinking about doing different things to each bus. That was the beginning of what I called multi-bus compression." Other Brauerizing techniques include parallel compression, where a signal is multed to two channels—one compressed and the other unprocessed; and sending a lead vocal to multiple compressors, then blending their outputs to taste on separate tracks.

On page 46, we'll show you five ways to Brauerize your own keyboard tracks, then take you on a tour of his enviable signal chain. Brauer's parting advice: "Music is always changing. I can't mix records today the way I did five years ago. You have to do the opposite of what you're comfortable doing. The mind has to stay fresh."

Continued on page 46

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Video: Mixing master class with Michael Brauer.

Tons more gear photos from Brauer's studio.

Extended interview on our site.

5 WAYS TO BRAUERIZE YOUR KEYBOARD TRACKS

1. Elton John Shimmering Piano

Try a Universal Audio LA-2A compressor, or its Powered Plug-In equivalent for your UAD card, on piano, then boost frequencies around 8kHz with a Pultec or similar EQ.

2. Ben Folds Piano

Treat the piano as above, but also boost EQ frequencies around 4kHz, to impart a brassier sound.

3. Distorted Organ

Try a tube overdrive processor to inject realistic grit into your clonewheel sound. Brauer likes Thermionic Culture's Culture Vulture. In the software realm, amp modelers such as IK AmpliTube work wonders if used judiciously.

4. Woozy Wurly

To compliment the percussive nature of most Wurly parts, try adding delay to impart added rhythmic interest. Universal Audio's UAD replica of Roland's RE-201 Space Echo is great for recapturing that vintage vibe.

5. The Rhodes Less Traveled

Recreate the revered Dyno-My-Piano Rhodes sound by adding a heavy dose of EQ, boosting frequencies around 2,500Hz, and attenuating some of the lower mids.

GILLIGAN'S TOYLAND

"Our platform is Pro Tools HD8 on a Mac Pro," says Brauer's assistant, Ryan Gilligan, "with 24 channels in and 64 out to our SSL 9000J console. The stereo out of the SSL goes to Rack 5 [at left] for processing with stereo compressors or EQ's. Rack 5 runs into a Pendulum PL-2 limiter to catch odd transients, then an Amek box that distributes the mix to monitoring on the desk, our Prism A/D converters, and Pro Tools for a backup print. We capture the main mix on a **TASCAM DV-RA1000HD (1)** fed by the Prism. A second Prism stereo out with independent sample rate feeds our mastering chain—a **Waves L2 (2)** hardware limiter and prototype Z-Systems limiter printed to an Alesis Masterlink. Everything in the room is clocked by an Antelope Isochrone Trinity."

What about plug-ins? "The first plug we find indispensible is the **Sonnox SuprEsser (3)**. I use it on nearly every mix for de-essing and removing plosives or guitar squeaks. Another tool that makes my life easier is **iZotope RX (4)**. It's unreal how it can remove unmusical noises without affecting anything around them. I'm also looking forward to **Drumagog 5 (5)** by WaveMachine Labs."

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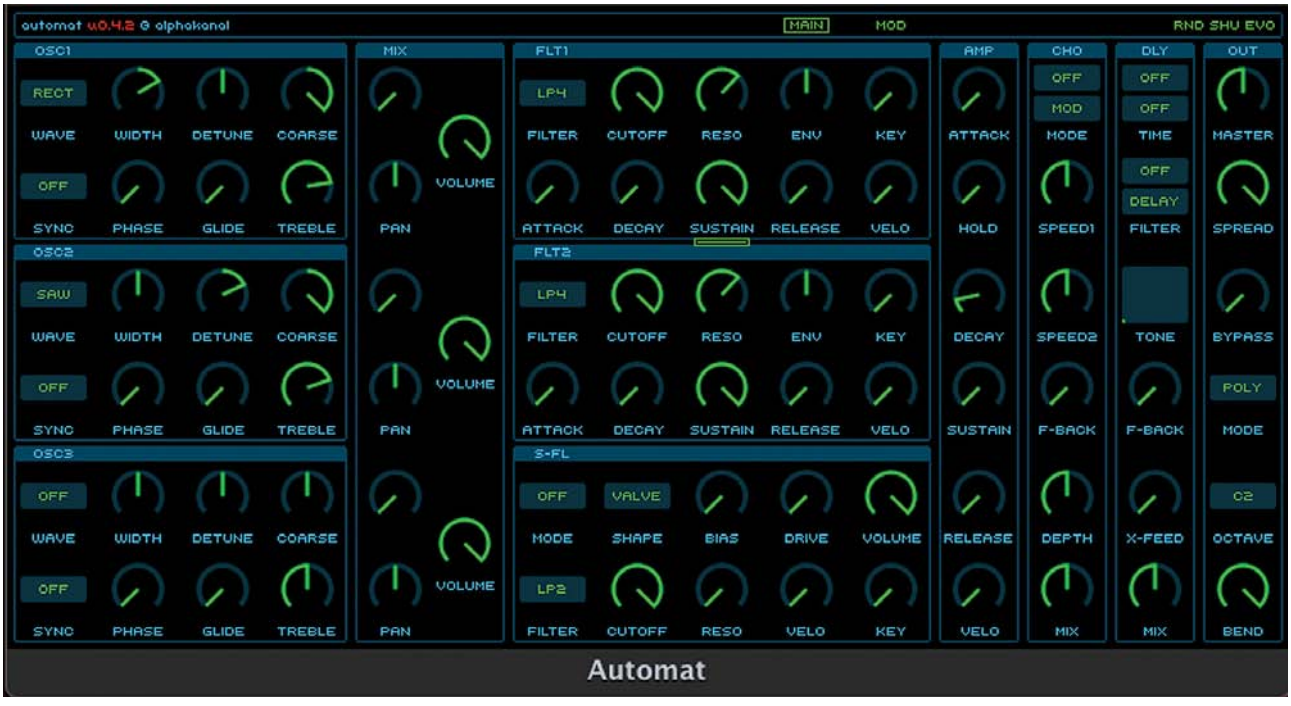
Get the free Automat soft synth used here.

Audio examples and downloadble "Lucky Star" Automat patch.



Steal This Sound

Madonna's "LUCKY STAR"

Most folks think of '80s-vintage Madonna and remember the hair, rubber bracelets, and attire that spawned a generation of dress-alikes. *Listen* to the Material Girl's early hits, though, and you'll find some pretty sweet vintage synth work. This month we'll break down the swirling, arpeggiated intro of "Lucky Star." You can create the patch on just about any two-oscillator virtual or real analog synth, but you'll certainly need to sequence it! I used AlphaKanal's nifty free soft synth Automat for Mac OS X. Mitchell Sigman

Step 1. Select a pulse wave for oscillator 1. Set it to a medium width using the pulse width control.

Step 2. Select a sawtooth wave for oscillator 2. Tune it to the same octave as oscillator 1, but detune a couple of cents from oscillator 1 for subtle chorusing. Set the mix of both oscillators equally.

Step 3. Select a 24dB-per-octave (or four-pole) lowpass filter (LP4 in Automat) and set the cutoff frequency fully open. Set the resonance to 50% to thin the sound out. Filter envelope amount and key tracking can be left at zero.

Step 4. Set the amplitude envelope as follows: attack at zero, decay at 10%, and sustain and release both at zero. You'll need to fine-tune the decay amount, but this is best done after the note sequence is programmed.

Step 5. Using a bus send effect or insert, add a quick single sixteenth-note delay. (This comes out to 127ms at Lucky Star's tempo of 118bpm.) Add a large hall reverb with about three seconds of decay using a stereo send to a stereo bus. Finally, add some low-shelf EQ to reduce clickiness and a slow panner to replicate the stereo movement.

Step 6. Program the note sequence–an arpeggiated *A* sus chord playing 32nd-notes, ascending four octaves then descending in groups of three: *A D E | D E A | E A D* | etc. I recommend programming in half-time with a click, then quantizing.

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Photo by Nolan Wells

Clavia NORD PIANO

by Tony Orant

Every gigging keyboardist struggles with reducing the size and weight of their rig, but wants the best tone they can get. Those of us who grew up playing piano have a harder time, as we tend to be married to 88 weighted keys, so if you love vintage electric pianos as much as acoustic pianos, finding a suitable tone/weight compromise can be a problem. Nord has been a real champion in this arena in terms of pure sound: They have top-shelf electric piano and organ emulations, and the Electro series and Stage Compact are knockouts in their weight and size class. However, since those keyboards took an all-in-one approach, some of us wanted more of a dedicated stage piano with a keybed that would really let our fingers connect to those non-organ, non-synth sounds.

Piano Sounds

Acoustic piano sounds have been a real divisor among Nord Stage fans—you either loved them or hated them. Though Nord's previous piano sounds were beautiful and extremely playable through studio monitors and headphones, I was never happy with them through amplification at gigs. I've always thought that piano sounds with not quite as much "character" would work better in loud rock settings. Certain workstation keyboards have done extremely well in that regard, and Nord has taken notice. Nord has added new multisamples to the latest edition (version 5) of their Piano Library, and one that really got my attention was "Grand Lady D." It's warm with lots of detail and just plain inspiring to play. With some slight EQ and compression added in the "West Coast" patch, this piano sound really works well in a loud rock band.

I'm a huge fan of the Yamaha CP70 electric grand, and the Nord Piano does a fantastic job with that sound. New upright pianos round things out. Somewhat understated, the Petrof Black reminds me of the piano on "Treat" from the first Santana album and sits really well in a mix. The Baumgart works well for those tack piano and honky-tonk sounds with the strings providing enough chorus that you'll never need the actual chorus effect. Just put on your arm garter and you can almost smell the beer-stained floor!

Nord also captured details that many stage pianos miss. Sympathetic string resonance, where undampened strings pick up vibrations from ones you just struck, adds the harmonic buildup you'll hear when someone plays lots of sustained notes or a big crescendo on a real grand piano—that sort of shimmer, sparkle, and grind that lives "between" the notes. Damper noise is faithfully recreated, as is half-pedal sustain. These subtleties get buried in most rock or cover gigs, but they do add that final percent of realism in contexts where the piano is more exposed, such as jazz practice or a cabaret gig where it's you and a singer.

Rhodes, Wurly, and Clav Sounds

Anyone who has played an Electro or Stage knows that Nord's Wurly, Rhodes, and Clav sounds are phenomenal. Playing them from the Nord Piano's keyboard is exquisite: Lean into the Wurlies, and they respond with a meaty grunt. Engage the Amp and Compression modeling, toggle to "Twin," dial in a little Drive, and you're channeling Ian MacLagan. As I tend to gig with guitar-oriented rock/blues bands, this is one of my favorite comping sounds when I'm being the "second guitar."

The Rhodes sounds vary from dark and nasty to bell-like Dynos, and bark very nicely when played with some muscle. I tend to be a little heavy-handed, and have experienced some wrist aggravation on one or two keyboards in the past five years, but even after four days in a row of gigs, I had no complaints here. The Nord Piano has a four-position Keyboard Touch button to accommodate players' touches. Hit Shift and that button, and the output changes to mono, summing all the sound from the

With optional Keyboard Stand EX and music rack.

stereo signal with no phase problems and making channel-stingy sound engineers happy.

The Nord Piano's Clavinets are a lot of fun to play and have been simplified: Pushing the Info button toggles between four sounds, emulating the D6 pickup choices: "neck" on, "bridge" on, both on, and both on but out of phase. Diehard Clav fans will have one nit to pick: The sounds all seem to be taken from a Clavinet in perfect condition. Most real Clavs exhibit a strong note-off sound: When the string comes free from the groove it has worn into the rubber hammer tip, the pickup catches that sound, which resembles the "chicken-scratch" funk guitar technique if you know how to play it. While this is a defect resulting from wear and tear, many of the coolest Clav recordings capitalized on it. Nord should add this to their otherwise realistic Clavs—perhaps in an update to the downloadable sounds the Nord Piano can load and play.

At the Gigs

I played the Nord Piano on a few "unplugged" gigs, and on some large festival stages in a Texas blues/rock band, using my QSC K10 powered speaker for an onstage monitor in both settings. I used "Grand Lady D" almost the entire evening for the unplugged gigs, as it just was so full and fun to play. There were certain songs where I reached for the EQ, spinning

Specifications

PROS Great acoustic piano, Rhodes, Wurly, electric grand, and Clav sounds. Relatively lightweight. Excellent keyboard action. Can download new sounds from Nord's online Piano Library, and includes full version on DVD. Includes robust three-pedal unit.

CONS No splits or layers. Effects section has no delay. Lack of pitch or mod wheels limits use as a MIDI controller.

CONCEPT Stage piano with user-rewritable flash memory for new sounds.
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Original audio examples.

Demos with string resonance on and off.

Video walkthroughs of the Nord Piano's sounds.

Props to Nord for including a serious triple pedal at no extra cost. It supports half-pedaling and correct sostenuto behavior.

the Frequency knob and Mid volume to tame the sound. In that relatively exposed setting, the Nord Piano sat nicely and was a pleasure to play. On the much louder gigs, I switched to the "West Coast" sound for all but the most relaxed songs. While not as outright realistic as the others, it had a nice front-end attack that cut through a really loud guitarist, and a smooth, full body that held its own even through the stage monitors, which were EQ'ed to prevent feedback on vocals, not necessarily for tone.

The festival's front-of-house engineer happens to be a friend who also plays keyboards, so I asked for his feedback (no pun intended) on the piano sound. He loved it, remarking that it sat well in the mix without him having to do anything to it. He noticed that on the slower songs, the midrange of "Grand Lady D" made it one of the most realistic stage pianos he's ever dealt with, noting that it was very dynamic and seemed to respond to delicate playing very well. As a longtime Wurly player (we've shared horror stories of mid-gig tune-ups with a soldering iron), he totally fell in love with the Nord Piano's Wurly sounds. When I pulled in some overdrive, I could see him give me the thumbs-up from 50 yards away.

Effects

The two effects groups are very simple. Each has a rate knob, and you control the depth by stepping through effects with the single button—for each type, two depths (Chorus 1 and Chorus2, for example) have LEDs on the panel, and you get a third, maximum depth when both LEDs are lit. Effect group 1 contains auto-pan, tremolo, and auto-wah; Effect 2 comprises phaser, flanger, and chorus. You can use both groups at once. Phaser 1 gave me those Steely Dan Rhodes tones; in fact, I preferred the minimum depth for almost any effect I chose. Electro and Stage users will notice that the auto-wah responds to velocity *a la* Stevie Wonder's

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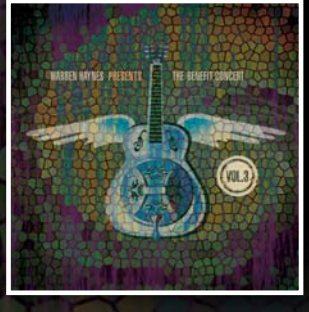

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Simultaneous effects include a pan/tremolo/wah group, phaser/flanger/chorus group, EQ, amp modeling, and reverb.

"Higher Ground," but isn't the kind where you hold a chord and it wahs at a set rate like on Led Zeppelin's "No Quarter." My Electro 2 had both kinds, and I used the latter a lot.

If you played a real Rhodes or Wurly before the workstation era, your amp would affect the sound, whether using the Suitcase Rhodes' bottom or plugging your Wurly into a guitar amp. The Amp/Compressor section interacts well with the EQ to duplicate this to a tee. The reverbs are clean and can be as subtle or extreme as you like, but there's no delay. This is a misstep, as nothing is sweeter than Rhodes with a taste of delay—think of Pink Floyd's "Sheep."

Conclusions

The Nord Piano is ideal if you want a dedicated stage piano with great tone—and mine fit into a 76-note keyboard bag. Its ease of tweaking onboard sounds and loading new ones makes it a great fit for technophobes. Its keyboard has a nice, deep throw with good cushioning as it bottoms out, making it very responsive, yet non-fatiguing for extended playing.

You may or may not care that it doesn't do splits or layers. For jazz gigs or casuals where you'd bring just one keyboard, it'd be nice to be able to throw an upright bass in the bottom couple of octaves or some strings behind your piano. Since the Nord Stage EX can play the same Nord Piano Library, its organ and synth abilities make it a better "one keyboard to rule them all," but even the non-weighted EX compact lists for a heftier $3,600, and weighted models go up from there. If you're in the market for an acoustic and electric piano specialist, the Nord Piano's stellar factory sounds, updatable Library, and instantly tweakable effects give it an unbeatable vibe.

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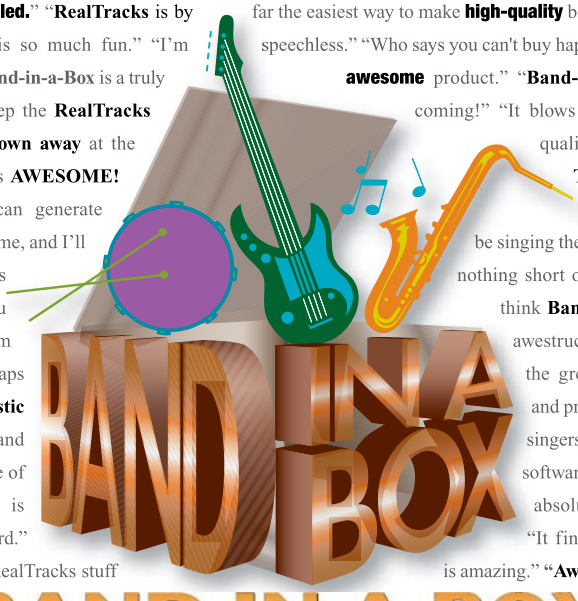
"They've **outdone themselves** this time, and I'll be singing the praises of **Band-in-a-Box** every chance I get." "This new musical concept you have created is nothing short of evolutionary. If it were a living creature, it would be a whole new species." "Just when you think **Band-in-a-Box** is as cools as it can be, you guys take it to a new level." **"Brilliant!"** "I'm awestruck." "All of the new instruments are just **smashing.**" "I must say, the pedal steel is perhaps the greatest accomplishment in the history of this brilliant program."" The RealTracks are **fantastic** and provide **great inspiration** for creativity." "This is a great gift to jazz musicians, educators, and singers." "Oh, wow. **This changes everything.**" "It's **stunning.**" "Thanks for a superbly useful piece of software." "I tried with many audio files and the chord detection is **amazingly accurate!**" "This is absolutely a must-have item." "Wow, I'm learning tunes fast with help of your Audio Chord Wizard." "It finds the exact chords to the song… perfectly." "Wow!" **"I am blown away!** The jazz/swing RealTracks stuff is amazing." **"Awesome."** "Is this cool or what?" "I'm in seventh heaven" "You won't regret it (and if you do, there's the **30 day money back guarantee**)." "I never thought I'd see the day this was possible." "I know it's been said before, but you guys are **incredible**." "This is **gonna set the world on fire!**" "I'm so stoked about how good everything sounds I can hardly stand it." "This is just killer." "Amazing, simply amazing." "[RealDrums] is really awesome sounding. Good work!" "Many kudos all around." "You never cease to **amaze** me. You got it." **"Wow and Double Wow."** "The **RealTracks** and **RealDrums** sound awesome." "Long live PG Music!" "Mind bending." "I am frankly amazed at most of the styles." "I am absolutely delighted with this new BIAB 2009 for Mac. ***Kudos*** to you and your team!" "First time I did a song with **Band-in-a-Box**, **I couldn't believe it!**" "I use it in the classroom and also in creating music in my studio. It is a fantastic piece of music software to own. I am greatly impressed." "I use **Band-in-a-Box** regularly. It has improved my musical talents by far and I enjoy it very much. Thanks to all who have helped make this program so **fantastic!!!**" "I am very impressed with your fantasic ***improvisational*** program." "It's a great ***educational tool***." "This is the most powerful, cost effective, user friendly music software I have seen." "BIAB is my best **learning tool.**" "J'ai la premiere version de **Band-in-a-Box** et ***j'aime beaucoup.***" "A truly **great product!**" "It's just incredible! I am a practicing jazz musician and was **absolutely dazzled** by your soloist feature." "Band-in-a-Box is an **awesome** tool for getting projects done NOW!" "The soloist feature is **phenomenal!**" "Excellent quality is a PG Music standard." "I use your program with my saxophone students. They love to play with a "real" band in the back!" "Who knew what Coltrane would sound like soloing over country music—**LOVE IT!!!**" **"Awesome software at a fantastic price!" "Band-in-a-Box, well, it's just a great program!"**



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KEYBOARD KEYBUY AWARD

The new Receptor hardware (bottom) had no problem running even this absurdly huge Multi (top) we created to test it.

Muse Research RECEPTOR 2

by Kevin Lamb with Stephen Fortner

The biggest problem I have running plug-ins is hitting the ceiling of my CPU resources. I know I'm not alone. We've all known the frustration of freezing tracks, increasing buffer settings and thus latency, and drinking heavily in an attempt to eliminate dropouts and distortion.

When we reviewed the original Receptor in the Nov. '04 issue, there was nothing like it. Though it had a computer running a custom version of Linux under the hood, it handled like a keyboard workstation's Multi mode on steroids—you just inserted soft synths and effects in the 16-channel mixer and *played*. MIDI routing was on hand for creating splits, layers, and even velocity-switched multitimbral setups, and audio inputs let you process vocals or instruments through VST effects. In the studio, it was a robust plug-in farm for your DAW. Onstage, it was the only platform many pros trusted to play their favorite virtual instruments.

On all levels, the Receptor 2 dramatically improves on the original. Computers have improved a lot since 2004 as well, accruing not just CPU speed and RAM but also gig-focused software hosts such as Apple MainStage. Can the R2 hold its title as heavyweight champ of hosts? Over the past few months, *Keyboard* editor Stephen Fortner and I have been beating up two Pro Max units—one with a solid-state drive—to find out.

First Impressions

The Receptor 2 runs as a standalone box or as a plug-in for your DAW of choice via UniWire, which we'll get to in a bit. Initially, we played it standalone, and found that setting up sounds using only the front panel controls was as intuitive as on any hardware rack synth, especially when preloading sample sets. Add a screen, mouse, and keyboard—or go Ethernet to your Mac or PC and open the Receptor Remote—and the R2 becomes incredibly easy to program. The front panel also has a 1/4" guitar input, stereo headphone out, and a recessed USB port for plugging in an iLok, Muse's copy protection method for plug-ins that require it.

Right off the bat, the Receptor 2 was a lot more stable and predictable than older Receptors I'd encountered. I was expecting at least a few crashes,

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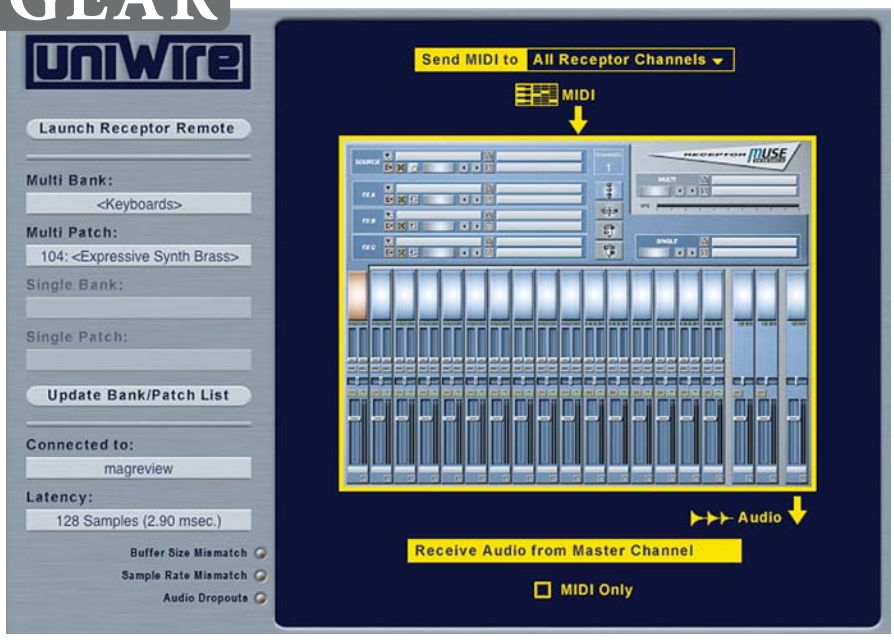

UniWire lets you treat the Receptor 2 and all its plug-ins *as* a plug-in for your DAW. You can load sounds or Multis right from the plug-in window, with no need to launch the more thorough Receptor Remote.

headaches, and some latency, but was proven completely wrong and found myself impressed with the R2's simple setup, ease of use, and flawless performance, whether playing it by itself or using it with Logic via UniWire.

Muscle

It was pure luxury to have three fully-loaded instances of Native Instruments Kontakt, three of Massive (each set to Ultra fidelity), and two of Spectrasonics Ominisphere playing in real time, with no processor hit to my Logic machine, a 17" MacBook Pro. Having it all within my DAW, with no effort or steep learning curve, was too much fun. To be honest, I had to stop myself from adding instruments just because I could.

Lacking any such self-control, Fortner loaded up all 16 channels of his R2 with plug-ins including Massive, Reaktor, Synthogy Ivory, IK Miroslav Philharmonik, and large libraries in Kontakt. He then mapped every one of them to MIDI channel 1 and held a two handed-chord. His observations:

"The R2's CPU meter got near the top, but at 96kHz and a buffer of 256 samples, the audio didn't choke, and this was the regular hard drive unit, not the solid-state. Keep in mind you'd never trigger this many notes from this many plug-ins at once in any real music production. I tried the same experiment in MainStage on a MacBook Pro with similar specs: Intel dual-core processor, 4GB of RAM, and 7,200 rpm hard disk. I got about three quarters of the way to where I'd been on the Receptor 2 before things became unplayable."

Speaking of solid-state drives, they're still more expensive than their spinning elders, but are falling in price. Our SSD-equipped R2 included Synthogy's Ivory virtual grand piano, and trust us, once you've seen the full-sized Italian Grand load before you can say "Italian Grand," you'll be spoiled for conventional hard drives for life. Still, even on the original Receptor (for which SSDs weren't an option), Snapshot mode let you change Multis without waiting for samples to reload, and the R2 retains this function.

UniWire

Uniwire is Muse-speak for a single Ethernet cable providing all audio and MIDI connectivity to and from your computer. The Receptor 2 comes with a "crossover" cable for direct connection to a Mac or PC; a standard cable lets you plug one or more Receptors into a hub, which is how you'd share them among work suites in a commercial studio. UniWire works without eating up too much bandwidth on a multi-computer network, but really screams when plugged into a single Mac or PC.

Once you've installed the Receptor Tools software on your computer, insert the UniWire plug-in on a track in your AU, VST, or RTAS host, and the R2 pops up like any other virtual instrument. A checkbox in the plug-in toggles whether UniWire carries MIDI only (in which case you'd

Specifications

PROS Nigh impossible to choke. Virtually no audible latency compared to a computer at the same buffer setting. UniWire passes audio and MIDI over Ethernet, makes Receptor a plug-in in your DAW, and works very well.

CONS Mixer interface, though powerful, feels a bit dated by today's standards. Needs a more elegant way to map hardware controls to plug-in parameters.

CONCEPT Rackmount hardware host for plug-in instruments and effects.
MULTITIMBRAL PARTS 16.
PROCESSOR *Standard:* AMD 64-bit dual-core 2.8GHz. *Pro:* Intel 64-bit dual-core 2.53GHz. *Pro Max:* Intel 64-bit dual-core 3GHz.
HARD DRIVE *Standard:* 320GB. Pro: 750GB. *Pro Max:* 1TB. Solid-state drives available at extra cost.
FORMATS HOSTED VST.
WORKS WITH HOSTS AU, VST, and RTAS (Pro Tools).
W x D x H 19" x 12" (including knobs) x 3.5" (2U).
WEIGHT 14.5 lbs.

PRICE ***Receptor 2 Standard:*** $1,599
Receptor 2 Pro: $1,999
Receptor 2 Pro Max: $2,499
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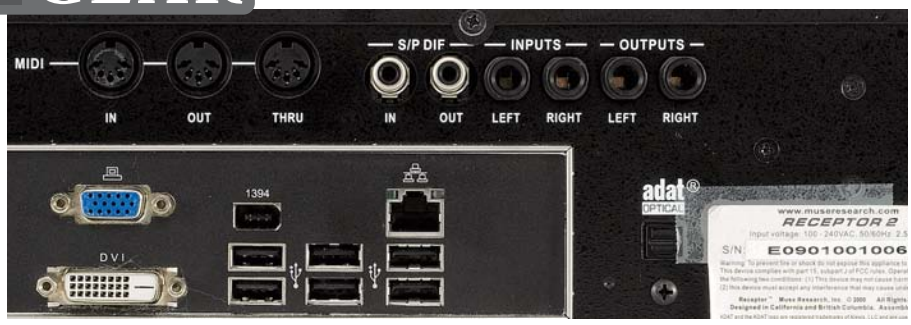

I/O includes balanced 1/4" ins and outs, S/PDIF digital audio at up to 96kHz, MIDI in/out/thru, 8-channel ADAT lightpipe, E-SATA (on Pro and Pro Max) for external drives, six USB ports, FireWire 400, VGA and DVI display connectors, and Ethernet.

use the R2's analog or digital audio outs), or audio as well. Muse recommends that in audio mode, you sync the R2 via S/PDIF from your audio interface, but I didn't, and still heard no glitches. Though UniWire sets the R2's buffer size at twice that of your host, we heard no latency even with our computers set as high as 256 samples and our Receptors at 512.

Says Fortner, "I recorded a Wurly from Lounge Lizard hosted in the R2 alongside multitrack audio running in Pro Tools LE. I made the sound brighter to accentuate any latency I might hear, but had no timing problems at all."

One caveat if you want to automate Receptor-based plug-ins from your DAW: Since they're living in external hardware, you need to think of them as such and automate them using MIDI CCs—your DAW's proprietary automation won't drill through to them.

Live

The Receptor 2 is incredibly robust for anyone who, rather than hanging it off their computer, wants to take it onstage instead of a computer. For touring, I'd take two, with solid-state drives. The Receptor's mixer is MIDI-controllable (volume faders, for example, respond to CC7 on the respective channel), but what about tweaking the soft synths therein, using knobs on your MIDI controller? Provided, of course, that the Receptor channel hosting the synth is listening to the same MIDI channel on which your keyboard is transmitting, the R2 won't get in the way of controller messages, so performance setups where you can twist away at filters and envelopes are certainly do-able. If a plug-in supports click-and-wiggle MIDI learn, that works fine whether your controller is hooked directly to the Receptor with a MIDI cable, or to your computer via USB.

While viewing any plug-in, clicking a little horizontal-sliders icon brings up a page of all the published parameters for that plug-in. From there, you can select which parameters you want to show up on the main screen's Edit page, reorder parameters, and even tie the first four in the list to the four hardware knobs beneath the Receptor's LCD. Each Mixer channel also gets 16 reserved CC slots for directly controlling plug-ins, to which you can assign parameters as you please. Though we'd prefer a more graphical approach (think MainStage's Edit view) that feels less like managing a lot of lists, these are powerful tools for managing control assignments.

Conclusions

The Receptor 2 is completely bad-ass. In a previous draft, the next sentence was "But it's expensive compared to a second computer." Strike that, and not just because you should never begin a sentence with a conjunction. The day before we went to press, Muse announced a major price reduction, and the new street prices (see page 58) make the three models eye-poppingly competitive with similarly-spec'ed Macs or audio-optimized PCs. Since I run Logic, I have the option of putting other Macs on my network as nodes to distribute the CPU load. Even so, the Receptor 2's UniWire is so absolutely seamless that it makes the prospect of setting up multiple computers to do the same job unattractive—and I thought that before the price drop. For anyone touring or moving from studio to studio, the Receptor 2 is almost too obvious not to use. With knockout processing punch, it's as much the heavyweight champ of hardware hosts in 2010 as the original was for 2004—and then some. In light of the new pricing, its performance earns it another prize: our Key Buy award. k

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9/25 Royce Hall @ UCLA - Los Angeles, CA
9/26 Orange County Performing Arts Center Costa Mesa, CA
10/3 Woodminster Amphitheater - Oakland, CA
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E-mu LONGBOARD 61 and SHORTBOARD 49

by Ken Hughes

Maybe the names are an homage to E-mu's surf-mecca birthplace of Santa Cruz, California. They're certainly priced for a beach bum's budget, and they're the first E-mu keyboards with built-in sounds since 2001's Proteus PK-6. How good can they be? Pretty dang good, as it turns out.

Feel

Right off the bat I had a thought about my Shortboard review unit: Since battery operation is possible, since it can transmit audio (but not MIDI) wirelessly to a Pipeline transceiver (sold separately), and since it's just the right size for slinging around your shoulder, where the heck are the guitar strap buttons?

Regarding key feel, I like the Shortboard's keys much better than those on my E-mu Xboard 61, which I chose because its keys felt best to me among the MIDI controllers available last year. (The Longboard's keys and internals are identical to the Shortboard.) Compared to the Xboard, they feel a bit heavier, with stiffer springs. The black keys are also broader and beefier. Eight velocity curves offer something for nearly everyone's touch. Unlike a lot of things in this price range, this plays like an instrument, not a note-entry appliance.

Sounds and Editing

Sourced from E-mu's ridiculously deep sample vaults, these two boards focus squarely on vintage sounds, though dismissing them as retro-only would be a mistake, as the sounds are useful in all types of music.

I own an E-mu Vintage Keys module, which almost certainly contains some of the same raw sample material as the 64 featured sounds on the Long- and Shortboards. Everything we want is here, and it's all thick, chewy, and realistic. Particular standouts include the OB-Xa, Matrix synth, and pre-layered Matrix/Solina patches. There's no dark Rhodes, just a bright Dyno-like version, but you can make it growly by closing down the filter. A single button lets you bang together splits and layers quickly and easily.

In addition to the 64 featured sounds, a General MIDI bank is on hand so you can use the Long- or Shortboard as a sound module to play back Standard MIDI files. With 128-voice polyphony, you're unlikely to hear voice robbing.

You get knobs for filter cutoff and resonance, envelope attack and release, and reverb and chorus amount. If E-mu had to build in just a few knobs to keep the cost low, these are the ones you'd reach for most often. The filter sounds great, too—very analog, very smooth, but the resonance doesn't sweep the way the cutoff does; you only hear changes to resonance after playing a new note. Most of the presets are swimming in more reverb than a karaoke bar, so it's good that you can dial it down, and edit and save sounds in the "Keys" bank. Don't underestimate the power of just six knobs—you can take these sounds impressively far from their starting points.

E-mu had also sent editor Stephen Fortner a Longboard, who remarked that the main piano sound is a lot better than you'd expect for the price. We both noticed, though, that playing chords of four or more notes on this sound (and to a lesser extent, the Rhodes sounds) produced a slight flam where not every note crisply attacked at the same instant. This didn't happen with synths, strings, or other sounds. While this may detract from either keyboard's desirability as a two-handed stage piano substitute, it doesn't lessen their appeal as all-around synths. I really

E-mu's Pipeline can send stereo audio wirelessly, or receive it from the built-in transmitters in the Longboard and Shortboard. A switch sets the RCA jacks to analog or S/PDIF digital.

substitute, it doesn't lessen their appeal as all-around synths. I really enjoyed the Shortboard onstage for synth stabs, leads, one-handed pop and rock piano parts, and the like.

Wireless Audio

E-mu's Pipeline can transmit or receive, so a pair can be used with any sound source. Since the Shortboard and Longboard have built-in transmitters, you only need one Pipeline to go wireless. I set the Pipeline's DIP switches and Shortboard's selector knob to the same channel, held the Connect buttons on both devices, and they saw each other in a few seconds.

Unless you've got more than 50 feet between the devices or heavy interference, wireless performance is impressive. At 20 feet, on a stage with three wireless mics, wireless in-ear monitors, and an audience full of smartphones, I had no trouble. I couldn't even tell I was wireless—it played and sounded just like stereo cables. At home, an active connection interfered with my WiFi. Changing the keyboard and Pipeline channels solved the problem.

Inside the Pipeline is a rechargeable battery with enough life to do a whole gig on a fresh charge. This is more important when using the Pipeline as a transmitter; when it's a receiver and parked by your mixer, you'd plug in the included AC adaptor.

Conclusions

For a street price of only $349 for the Shortboard and $399 for the Longboard, there's an awful lot to like, especially the classic synth sounds. Add your own strap buttons, and the Shortboard is suddenly the least expensive "keytar" (we need a new word) out there. To make any other keyboard wireless, you'd need a third-party system costing at least the same as the Shortboard itself. I expect that E-mu will sell a jillion Longboards and Shortboards. Either makes a great "my first synth," and they're so inexpensive that they'll also appeal to pros as the synth you always keep in your trunk in case a jam breaks out. Access to a surfboard in the event of rippin' waves should be so easy. k

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Video: Demo at *Keyboard*

Original tune by Ken Hughes using only E-mu Shortboard sounds.

Specifications

PROS Low cost. Great sounds. Nice-feeling keys. Built-in wireless audio transmitter. Easy to use.

CONS On piano sounds, big chords produce some note flam.

CONCEPT Low-cost, great-feeling, great-sounding sample-playback synth for use onstage or with your sequencer/DAW.
POLYPHONY 128 voices.
MULTITIMBRAL PARTS 16.
WxDxH *Longboard:* 39" x 11.5" x 3". *Shortboard:* 32.5" x 11.5" x 3".
WEIGHT *Longboard:* 14 lbs. *Shortboard:* 12 lbs.

PRICE ***Longboard (61 keys):*** $499 list/$399 street.
Shortboard (49 keys): $399 list/$349 street.
Pipeline: $149 list/$99 street.

emu.com

In the main screen, the browser is along the left, and the send effects' returns and master control are toward the lower right.

Toontrack BEATSTATION

by Craig Anderton

Of all the virtual drum instruments out there, Beatstation carves out its own niche by seeking the sweet spot between ease of use and depth. How easy is it? I figured out 95% of the program without a manual. How deep? Keep reading.

Of particular interest to keyboardists, Beatstation includes bass and lead line modules that respond to notes above and below the drums, respectively. If you're better on the ivories than the skins, the program comes with a library of MIDI grooves to kick-start your creativity.

As You Like It

Beatstation is big on customization: You can change the pad layout, save custom layouts, and re-skin the whole look. The pads are also highly editable; each has two effects sends, volume (for mixing—there's no separate mixer window), five layers to which you can drag-and-drop samples (in WAV, AIFF, or MP3 format), mute and solo buttons, the ability to assign a pad to a mute group (where hitting one pad of the group cuts off others that are ringing, as commonly used for hi-hats), and an insert effect slot. For each layer (sample), you can edit volume, pitch, pan, envelope, reverse, start time offset, and various other parameters.

The Browser

The core library includes four categories—instruments, REX files, MIDI grooves, and sounds—which you access through the browser, then drag-and-drop onto pads and players (*e.g.*, REX or MIDI file player). You can filter these to see, say, only MIDI grooves, as well as drag-and-drop from the desktop.

Browser drag-and-drop is bidirectional, as you can drag MIDI Grooves or REX files from Beatstation into your host and vice-versa, assuming your host supports REX file import. A pad can play a REX file from beginning to end, play through each slice sequentially when you trigger the pad multiple times, or play sequentially but choose random REX slices. In addition, you can drag individual slices onto pads, thus transforming any REX slice into a potential drum sound—and remember, you can have five layers of these slices. You even display where in the browser a REX file (or MIDI file) originates by highlighting it and clicking a magnifying glass button.

Effects

Beatstation has the traditional three effects slots, namely an insert effect for each pad, two send effects, and a master effect. There's a lot to choose from: three lo-fi effects, four choruses, 13 compressors, 23 delays, four distortions, 13 EQs, five gates, 20 reverbs, and lots of effects chains (including six master insert chains and 13 time-based chains). Surprisingly, you'll also find sidechain-able compressor, gate, and master chains, where any pad can provide the sidechain signal. This is great for gating the bass and lead lines with particular drum pads for synchronized effects, like "chopping" the bass with the kick drum as Francis Preve discusses in his Dance column on page 42.

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Each pad has an extensive array of parameters. Note that under the Sounds tab, you can layer up to five samples.

Sampling

In standalone mode, a sample recorder window becomes available. This listens to your computer's default audio input, and records up to ten seconds of audio. Since it edits as well as records, you can trim the sample's start and end points, fade in and out, set loop points, zoom the waveform view, normalize levels, change gain, and set a threshold for recording to start automatically when the audio exceeds a certain level. When you're done, simply drag the resulting sound from the recorder to a Beatstation pad's layer.

Specifications

PROS Does more than just drums. Very cost-effective. High fun factor. Large 1.63GB core library. Highly customizable. Includes sample recorder. Accommodates 64-bit operating systems.

CONS Per-pad mixing only—no main mixer. MIDI learn not yet implemented. No ReWire.

CONCEPT Drum module with bass and lead synths, as well as MIDI grooves.
FORMATS Mac or PC. AU, VST, RTAS, and standalone.
SYSTEM REQUIREMENTS *Mac:* OS X 10.4.11 or higher (supports only 32-bit hosts under Snow Leopard). *PC:* Windows XP SP3, Vista, 7, 32- or 64-bit systems. *Both:* 512MB RAM, 2GB hard disk space.

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TJ TEXT & BILD

The sample recorder (available only in standalone mode) lets you record and edit up to ten seconds of audio, then drag it onto a pad.

For even more sounds, any installed Toontrack expansion packs show up in the browser. There's also the new BTX file format, which defines all elements of a Beatstation setup.

Bass and Leads

These are simple polyphonic synths that share characteristics with pads, except that they respond to incoming notes so you can play melodic lines. Since you can layer up to five samples, single pads can play back chords, Korg KARMA-style. While you can of course play these modules from a standard keyboard controller, you can also drive them from Beatstation's Standard MIDI File player. The ability to include bass and leads means you can create not just beats but entire mini-compositions; it's easy to export these by using the "Drag MIDI as Audio" function to drag files to the host or desktop. The result is beat software that lets a keyboard not only trigger drum sounds, but actually play keyboard parts.

Conclusions

Just because Beatstation is fun, easy to use, and inexpensive doesn't mean it's a lightweight. Toontrack is known for fine software, and that lineage made it into this "budget" program. Sure, Beatstation lacks a few pro features like individual pad audio outputs, a dedicated mixer, and ReWire support. There's also no MIDI learn, but it's on the list for an upcoming update.

The program definitely doesn't skimp on the core library. The wide variety of sounds leans towards dance and hip-hop, but not to the exclusion of other genres, and the easy browser access is a plus. It's painless to come up with cool beats, not just because the program is easy to learn, but because you don't have to agonize over finding sounds—there's plenty of useful raw material.

If Toontrack's goal was to bring quality to the masses while keeping the end result loose and fun, they've certainly succeeded. Don't let the low cost fool you; this is a serious tool for creating beats. You just don't have to be serious while you're doing it! k

More Online

Get these links and more at keyboardmag.com/sept2010

Custom '80s drum samples for Beatstation from Craig Anderton.

Lots of Beatstation tutorial videos.

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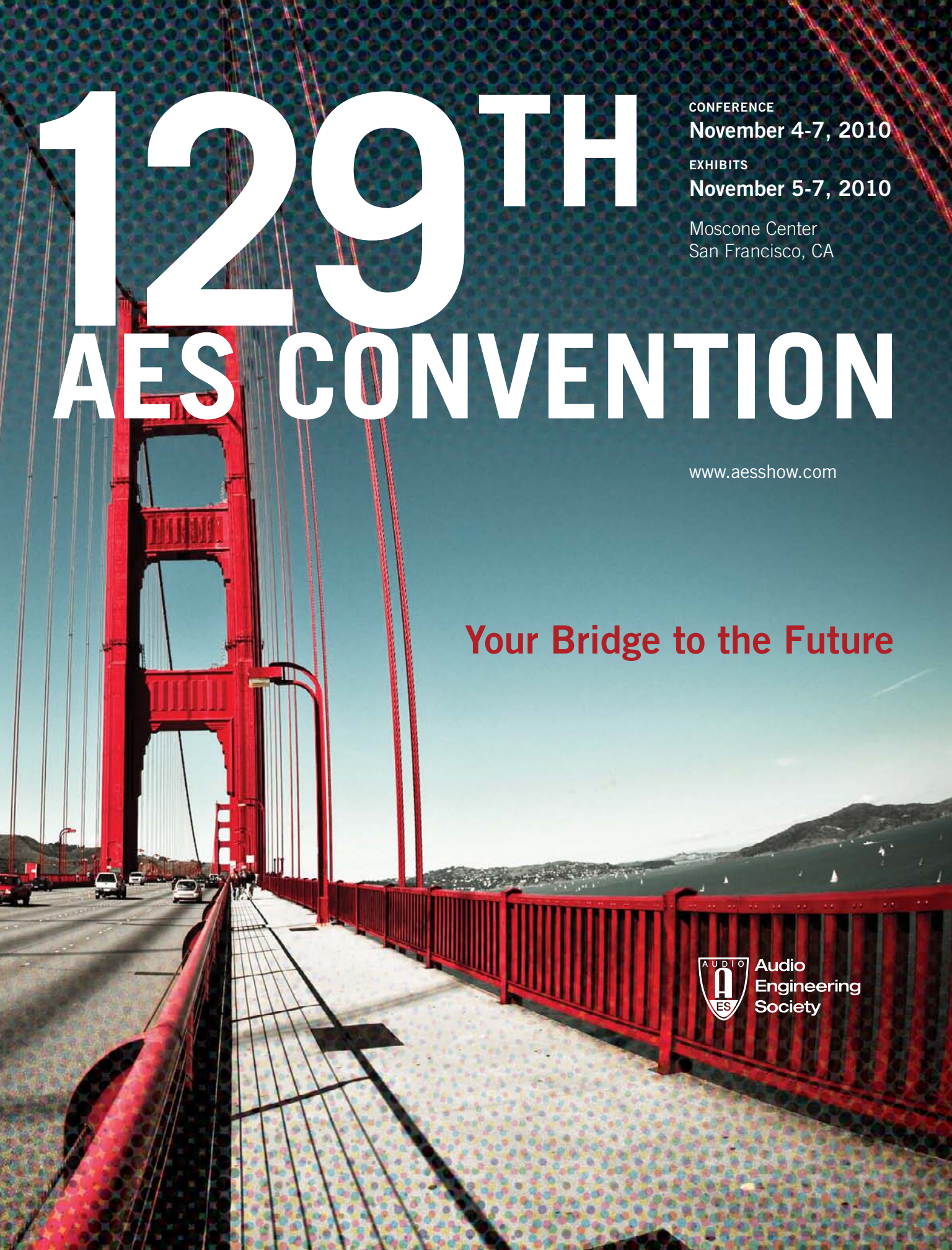
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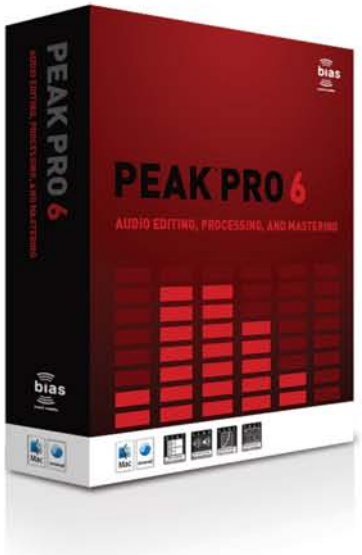

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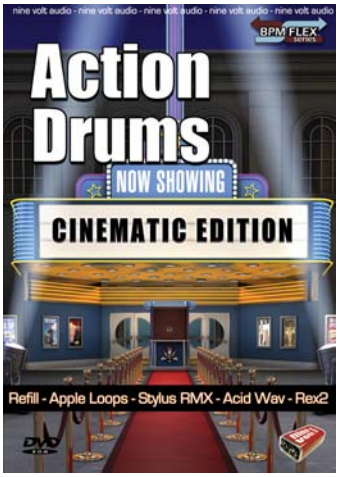

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KEYTARS PAST AND PRESENT

by Stephen Fortner

1795

ORPHICA Invented by Karl Leopold Röllig, this portable piano was small enough to be held and played like a guitar.

1977

ROGER POWELL'S PROBE Custom designed by the groundbreaking synthesist for his live shows with Todd Rundgren and Utopia.

1980

PERFORMANCE MUSIC SYSTEMS SYNTAR The neck of George Mattson's self-contained synth had nine springy wooden buttons to send variable voltages for performance control. A favorite of Jean Michel Jarre.

1988

LYNC LN-4 Played by Jan Hammer, this premium remote boasted aftertouch, multi-zoning, wireless MIDI, and a four-MIDI-output rack box. Highly sought after.

1986

CASIO AZ-1 Popularized by Thomas Dolby, the AZ-1 also took stand-up playing seriously enough to include aftertouch, not just velocity.

1985

ROLAND AXIS We tend to remember the AX-1 and AX-7 more, but unlike those, the first of Roland's wearable MIDI controllers had aftertouch.

1983

YAMAHA KX1 Along with its mini-keyed sibling the KX5, it was a staple of the '80s—and got a big visibility boost from Chick Corea.

1981

MOOG LIBERATION Here's Jarre with the first mass-produced strap synth, essentially a Prodigy with a Polymoog-like pitch ribbon on the neck.

2005

WILLIAMS KEYTAR Ironically, the only company to trademark the word "keytar" didn't produce a synth—this was a string instrument with keys in place of frets.

2007

ZEN RIFFER Jordan Rudess endorses Charles Tentindo's handcrafted controller, which doubles as a gladiatorial weapon in Klingon rites of passage.

2009

ROLAND AX-SYNTH Waking the industry from a long keytar hibernation, Roland's new baby features built-in sounds. We reviewed it in May of this year.

2010

ROCK BAND 3 Keys joining the addictive video party is only half the story—the game keyboard is also a real MIDI controller.

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